# THE MARINE RECORD.

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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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### ALUMINUM LIFE-BOATS.

A Washington dispatch says: Naval constructor J. J. Woodward and J. C. McGuire, of the Navy Department, returned from Baltimore this morning, after having tested the aluminum boats, which have just been made by a firm in that city for the Wellman Arctic expedition. The first boat completed, which is 18 feet long, 4 feet beam and 2 feet deep amidships, weighing 350 pounds, was thoroughly tested and found to be even more stable than was expected. The boat was put in the water empty, and a man tried to capsize it by sitting on the gunwale and hanging outside, but it was impossible to overturn it. It was then loaded with sandbags weighing 3,333 pounds, and seven men weighing 1,128 pounds also got on board, making 4,461 pounds in all. Even with this great load the boat remained 5½ inches out of the water amidships. The boat was then unloaded and the air-tight compartments were tested by capsizing the boat. But it was found impossible to get it more than half full of water, since the compartments held it so high out of water as to act on the principle of a self-bailer. The boat was then taken alongside the wharf and filled with water until the gunwale was flush with the surface, and then a man got on either end over the airtight compartments. Still the boat did not sink, and as soon as it was cast loose it heeled over and emptied out one-half the water and then righted itself. The air-tight compartments were subsequently tested by being filled with water, and when the doors were screwed down the boat was rolled over, and the compartments were found to be perfectly tight.

Two of the boats are not quite finished; but when they are completed they will bo subjected to similar tests. The two naval experts who made the test have been requested by Secretary Herbert to make a full report in writing to the department. All of the boats will be tested, and an official report made upon them to the Navy Department before the expedition sails. The Secretary of the Navy is very much interested in the matter, and some of the other department authorities believe that there are great possibilities ahead for aluminuum boats for the Navy.

### BIDS ON CANAL WORK.

An abstract of the bids submitted to Gen. O. M. Poe for work on the new 800-foot lock of St. Mary's Falls ship canal are as follows: For excavating 25,950 cubic yards of earth and 4,540 cubic yards of rock, more or less, the lowest bidder was Simon Dumond, of Sault Ste. Marie, at 45 cents per cubic yard for earth, and $1.25 per cubic yard for rock, making a total on estimated quantities, of $19,152.50. Other bids were:

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| Saddler & Allen | $19,379.50 |
| Powell & Mitchell | 22,836.60 |
| Hughes Bros. & Bangs | 27,247.80 |
| Abram Mitchell | 30,143.20 |
| Lipsett & Gregg | 33,339.15 |

For framing and filling cribs, 40,000 cubic feet of framing and 5,500 cubic yards of filling, the lowest bid was also made by Mr. Dumond, at 6½ cents per cubic foot for framing and 40 cents per cubic yard for filling, amounting to a total of $4,800. Other bids were:

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| Martin Lynch | $5,500.00 |
| Saddler & Allen | 5,715.00 |
| Powell & Mitchell | 6,150.00 |
| Abram Mitchell | 6,225.00 |
| Lipsett & Gregg | 6,992.00 |
| Hughes Bros. & Bangs | 7,450.00 |
| C. E. Mitchell & Co. | 8,000.00 |

### JURISDICTION IN COLLISION CASES.

The Bureau of Navigation, Treasury Department, is informed that Her Majesty's Court of Appeal, Malta, on the 23d inst. confirmed a decree given by the Commercial Court having reference to the jurisdiction of the Malta courts in cases of collision. It was held that the master and owners of a British vessel can sue a foreign company in that island for damage arising from a collision, even if the foreign vessel is not actually in Malta harbors, when the owners of that ship have an gency as in the present case, or have moneys in Malta and judgment can be enforced. The case arose out of a collision that took place at the entrance to Smyrna harbor in October, 1892, between the British steamship Ardlethan and the Italian steamship Birmania.

### ELECTRIC SEARCH LIGHTS FOR COAST DEFENCE.

The Ordnance Bureau of the army has decided to use the electric light as a means of coast defence, and in about a month experiments will be made at the Sandy Hook Proving Ground to determine what class of light is best suited for the purpose. The adoption of torpedoes as a means of modern warfare has made necessary this innovation. With electric search lights mounted on fortifications the danger from torpedoes at night will be considerably lessened, and this fact has been recognized by foreign powers. Recently the Ordnance bureau purchased from a German firm the big electric search light exhibited at the World's Fair, which is said to be the largest of its kind in the world, this will be mounted at Sandy Hook in about a month, and ordnance officers hope the experiments with it will not only determine what character of light is best adapted to the needs of the service, but will also succeed in obtaining an appropriation for the purchase of such apparatus for all the fortifications in the United States.

### YACHTING MATTERS.

Elaborate preparations are being made by the yachtsmen of Sodus Point, Lake Ontario to entertain the Rochester and Oswego yacht clubs which will rendezvous at Sodus Point on May 29th and remain over memorial day. Sodus Bay is about free from ice and a large club house has been erected at the sea end of Sand Point which will be occupied by the Rochester yacht club later in the season. The hotel proprietors of the village and the Northern Central railroad officials have subscribed $300 for the yachtsmen who will meet in July. It is proposed to have a series of yachting events lasting ten days at which this sum will be awarded in prizes.

### THE ROCKET APPARATUS SYSTEM.

Commissioner of Navigation Eugene T. Chamberlain has issued a circular explaining the system of using the rocket apparatus in saving life from stranded vessels. These instructions have been liberally circulated in the past, yet it is possible that many seamen have only glanced cursorily at the particulars without giving due attention to the details, hence, there is a danger that when being caught in a pinch the exact method would not be followed by those desiring a rescue.

The person having the rules clearly in mind might be the only one on board of a vessel able to work intelligently with the people on shore, and, as navigation is about opening again on the lakes, we take this opportunity of calling the attention of the lake marine to the international instructions:

"If your vessel is stranded and a rocket with a line is fired over it, get hold of the line as soon as you can, and haul it from the shore till you get a tailed block with an endless fall rove through it; make the tail of the block fast to the mast about 15 feet above the deck—if the masts are gone to the highest secure part of your vessel—then unbend the rocket line from the whip, and signal to the shore by waving a flag or cap in the day, and at night by waving a light.

(*a*) A hawser will then be bent to the whip and hauled off to your ship from the shore. Make fast the end of the hawser 18 inches higher up the mast than the tailed block, taking care that there are no turns of the whip round the hawser. When the hawser is fast let go the line by which it is bent to the whip, and signal again. The men on shore will then set the hawser taut, and haul off to you, along it, a breeches buoy; let one man immediately get into the buoy, thrusting his legs through the breeches; signal as before and he will be hauled ashore, and the empty buoy returned to the ship again and again till all are landed."

# NEWS AROUND THE LAKES.

## CHICAGO, ILL.

*Special Correspondence to The Marine Record.*

C. W. Elphicke & Co., chartered the steamer Minneapolis for wheat to Buffalo at 3¾ cents.

Capt. P. J. Canniff will command the steamer Walter Vail and Capt. McAvoy her consort, the Baltic.

J. G. Keith & Co. chartered the steamer Thomas Maytham for 110,000 bushels of wheat to Buffalo at 2 cents.

Capt. W. J. Carter will command the steamer W. P. Ketchum and Capt. John Carter the George B. Owen, her consort.

Louis Windmiller, the well known vessel supply man, left Chicago Sunday night for Cleveland and other eastern ports.

Chief engineer Fred Otto arrived here from Manistee last week to fit out the machinery of the steamer H. L. Worthington.

Cook, Calbick & Co. chartered the steamer J. H. Prentice and consort Middlesex for wheat to Kingston at 4 cents free of canal tolls.

It is reported that several large blocks of soft coal have been sold to Milwaukee dealers at a figure which mplies a lake freight of 30 cents.

Austin Gibbons, who was for twenty years engineer in the employ of the V. O. T. Co., has been appointed first assistant city engineer of the Chicago avenue water works.

Local inspectors Sinclair and Moore inspected the Dunham Towing & Wrecking Co.'s tugs T. T. Morford, Miller, W. L. Ewing, Bob Teed and R. Dunham, on Tuesday.

The Lake Carriers' Association shipping office will be opened for the season at this port on the 1st of April. Capt. Charley McCarle has been appointed bridge tender at the Madison street bridge.

The Independent Tug Line tugs towed the steamer Minneapolis to the Minnesota elevator last Thursday to unload her cargo of barley, and on Tuesday to the Illinois Central elevator to load wheat.

The schooner J. W. Naghtin's sails and gear were taken from H. Channon Co.'s sail loft Monday. She is being fitted out and will leave this week for Manistee, for lumber, the first schooner to leave Chicago this season.

Capt. John Pringle, Jr., and engineer George Randall arrived Monday morning to fit out the steamer A. D. Hayward. Capt. Pringle will also give the the barge Peshtigo a general overhauling and some new ceiling, deck frames and deck.

The steamer W. H. Barnum was chartered for corn to Port Huron at 2 cents, to sail on or before April 1st; 400,000 bushels of wheat has been taken at 2 cents during the past few days. The steamer Mattie C. Bell was chartered for wheat to Port Huron at the same time.

The Dunham Towing & Wrecking Co.'s tugs towed the steamer Lycoming to the City elevator Saturday, the steamer Thomas Maytham to the same elevator, Sunday the steamer Susan E. Peck to the Iowa elevator and the steamer Delaware to the Armour C. elevator Monday, all to load grain for Buffalo.

P. H. Fleming & Co. chartered the steamer City of Berlin for 95,000 bushels of wheat to Buffalo at 2¼ cents and the steamer W. H. Barnum for corn to Port Huron. Capt. John Prindiville chartered the schooner Mattie C. Bell for wheat to Buffalo at 2 cents. The captain left here Friday for a two weeks' trip to the Gulf of Mexico.

Capt. Cyrus H. Sinclair, local inspector of hulls for Chicago district, will, as soon as his successor is appointed, join the firm of N. C. Macdonald & Co., marine insurance agents. Much regret is felt at this port at the worthy inspector's resignation from the post which he has so well and ably filled, greatly to his own credit and to the satisfaction of all parties concerned. We wish him very great success in his new occupation.

The V. O. T. Co.'s tugs Van Schaick and Calumet towed the steamer John Emory Owen to the Minnesota elevator Friday to discharge her cargo of wheat. Last week when her cargo was inspected by a state grain inspector it was discovered that at hatch No. 5, on account ofapparent leakage from the deck, it was wet, mouldy and hot and that condition had bred weevils in about 500 bushels; also that at hatch No. 2, where water had leaked, about 50 bushels more were in like condidion.

The steamer City of Berlin, loaded and drawing 16 feet, 6 inches of water, in tow coming down the south branch of the river Monday morning stuck on the new Van Buren street tunnel. The water was above its usual average stage, but the tugs could not pull the steamer over the obstruction. Tuesday morning the water in the river having raised considerably, the tugs pulled her over and towed her to the Wells street bridge. The new tunnel is supposed to have 19 feet of water above it, but the experience of the City of Berlin proves considerably less.

An engineer who arrived here from Cleveland last week, to fit out a steamer, had a very startling experience at a boarding house at which he put up on his arrival. The boarding-house is on Twenty-second street, in a locality where the late Dr. Cronin has many friends and sympathisers, and the boss of the house had been drinking freely to assuage his feelings upon the verdict in the Coughlin trial. For some unexplained reason he took the newly arrived boarder for a detective, and when the latter sat down to his supper, only the second meal in the house, although he had paid a week ahead, the boarding-house keeper covered him with his revolver and threatened his life, but was fortunately prevented from doing him injury by the other boarders who came to his rescue.

WILLIAMS.

## BUFFALO, N. Y.

*Special Correspondence to The Marine Record.*

The Mills Dry Dock Co. have the Anchor Line steamer China and the Western Transit liner Empire State in dock for general overhauling and repairs.

Manager Henry has moved the Lehigh Line to the Coal and Iron Exchange for permanent headquarters. The Washburn-Crosby flour agency has gone with it.

The Union Dry Dock Co. are building for O. W. Cheney et al a tug 81 feet long, 19 feet beam, 11 feet depth of hold; engine, 23 by 28; boiler, 8½ by 14 feet for 150 pounds steam.

The steamer Nyack, which ran in the World's Fair traffic from Buffalo last year, has been purchased by Milwaukee parties and she will run between that place and Muskegon the coming season.

The opening coal rate out of Buffalo to Milwaukee and Chicago will be 40 cents. The steamers Fred Pabst and William H. Wolf, now at Milwaukee with cargoes of Chicago corn on board, are reported to have been placed at that figure for the return trip to Milwaukee.

There is scarcely any real activity on the docks yet. About half a dozen engineers are at work. The fitting out of the America and Brazil has begun. There is an order to tow the Nimick and Harper to their home port, Fairport, but they will not start for a day or two yet.

Capt. Fletcher has been appointed shipping master of this port by the Lake Carriers' Association. Mr. Fletcher is about to fit out his office over No. 29 Main street. There will be only one shipping master here this season, with an assistant. The latter has not been appointed yet.

The agreement of the package freight lines to sail on April 16th has been made absolute. The proposition for an earlier date was abandoned on account of the failure of the Soo Line to enter the arrangement, but it is now stated that Gladstone is frozen up tight, and the line will not try to sail before the 16th.

The F. P. Little Electrical Construction & Supply Co. report business brisk and say that they are enjoying a fair share of the marine patronage. Among their recent orders is a contract to equip the large new steel steamer H. H. Brown, recently launched from the Wyandotte yards of the Detroit Dry Dock Co.

The indications at present are that there will be a good spring trade in lumber, but it is believed that the opening lake freights on lumber will be less than at any previous time in the history of the trade. Offers, it is understood, have been made by vessel owners for first opening shipments from Menominee to Buffalo at $1.60.

The lumber men are trying to come to an understanding with the handlers and other interested people on the season's wages, but so far they have accomplished nothing. The dealers hold that the 25 cent handling rate which prevailed last season ought to be lowered, but the stevedores as well as the shovers are naturally against it. The proposition to reduce the rate to 22 cents, and the wages to a corresponding figure, say a cut of 5 cents, is still maintained by the dealers, but it will take another meeting at least to adopt it.

Secretary Thurstone, of the Merchants' Exchange, yesterday received the following letter from Superintendent of Public Works Edward Hannan in regard to the opening of the Erie canal: "I have examined the matter thoroughly and from the present condition of affairs along the line of the canal I do not believe that I can have navigation opened before the first of May next. The wall to be built near Schenectady is nearly a mile in length. The appropriation for the work was made by the present Legislature and it was considered necessary that the work should be done before the opening of navigation. The contractors are good and practical men and are forcing the work with as much haste as possible. There is also considerable work to be done at lock No. 19, the Little Falls feeder, and at Syracuse. We are doing all that we possibly can to complete the necessary work so that we can have the canals opened at as early date as it is possible to do so."

## TORONTO, ONT.

*Special Correspondence to The Marine Record.*

The ferry steamer Clark Brothers is making regular trips between the city and island.

The schooner Jessie Drummond is expected to arrive with a load of coal for the Ontario Coal Co.

Capt. Frank Jackman has commenced fitting out the tug Jackman to be in shape for vessel arrivals.

Mr. C. A. Jaques, of the forwarding firm of G. E. Jaques & Co., of Montreal, was in the city last week looking after the interest of his firm.

The first arrival of the season was the schooner Coval, Capt. James Blowers, with stone from the lake shore. After the usual custom harbor master Baldwin presented Capt. Blowers with a new hat.

The steamer Macassa, of the Hamilton Steamboat Co.'s Line, will make her first trip between here and Hamilton on April 7th. Mr. Ed. Bishop, Toronto, representative of this company, has already planned several excursions for the season.

The Toronto Ferry Co. is having their fleet of steamers fitted out at Oakville, where they wintered.

The steamer Ocean is to be towed from St. Catherines to Toronto to receive the new boiler being built for her by Messrs. Ingles & Son. She will probably arrive on Saturday.

The steamer Lakeside will make her first trip of the season between this port and St. Catherines on Thursday, the 22d inst. Capt. N. J. Wigle will command her this season. She will continue on the route until the arrival of the Empress of India, when she goes to Lake Erie to open up other business.

Messrs. Smith & Keighley have appointed the following officers to the steamer Carmona: captain, John H. Scott; first engineer, Frank White; purser, George C. Harbottle. This steamer will again run on the route between Toronto and Charlotte, having rail connection at the latter point for Rochester, New York and all interior points.

Capt. Thomas Donnelly, of Kingston, hull inspector, passed through the city last week en route from the Sault, where he had been taking proceedings for the government against several tugs for infringement of the steamboat inspection act, in carrying passengers between points on Manitoulin Island and the Sault without the necessary passenger license.

In last week's issue of THE MARINE RECORD an article appeared stating that the steamer Campana had been sold to the lessees of the Erie & Huron Railway to run between Cleveland and Rondeau. Your correspondent interviewed Mr. Keighley, managing owner of the steamer, and he says there is no truth in the report.

The Niagara Navigation Co. have appointed the following officers to their fleet: Steamer Chippewa—captain, John McGibben; first mate, James Richardson; first engineer, Robert McCall; purser, N. Harbottle. Cibola—captain, W. H. Solmes; first mate, John McKeown; first engineer, Wm. Walsh; purser, Joseph Chapman. Chicora—captain, James Harbottle; first mate, Robert Clapp; first engineer, Hy. Parker; purser, E. Sheppard. Ongiara—captain, Sanderson.

SPARTA.

## OWEN SOUND, ONT.

*Special Correspondence to The Marine Record.*

The S. S. Myles will be commanded by Capt. Mackay again this season, and he and engineer Scott are busy fitting out.

The photo-gravure supplement of your valuable paper showing views of nine steamers I have had framed and is admired by all who have seen it.

Wiarton, Collinwood, Meaford and this port are all free of ice, but reports from Stokes Bay say they have 16 inches blue ice. Navigation bids fair to open earlier than it has done for years.

MARINE.

Capt. F. X. Lafrance will command the City of Midland this season, belonging to the North Shore Navigation Co., and they are to be congratulated for having secured such an efficient officer and general favorite in their line. Capt. Jno. McNab will again sail the United Empire and engineer Scott will handle the throttle.

It is said the N. S. Navigation Co., have been trying to cut the wages of their officers down for this season. This in the face of our scale of wages across the line and very seldom if ever as good wages paid to our men accounts for so many of our men crossing the line and becoming American Citizens. Would the reporter for Collingwood please name the two steamers 331 feet in length that are in the dry dock there?

The mild weather of the last few days has stirred up the marine community and has been the means of setting a large force of men at work fitting up the different steamers in the harbor. Starting on the East side of the harbor, the C. P. R. steamers Manitoba, Alberta and Athabasca have a big gang at work painting and repairing decks and cabins. They are to be officered by the same men as last season, the genial and well liked Capt. Ed. Anderson, being commodore of the fleet and will walk the bridge of the Manitoba, Capt. Geo. McDougal the Athabasca, and J. McAllister the Alberta.

The Algonquin, Capt. McMaugh and Engineer Sam

Brisbane, is also getting ready for business, Capt. Jno. Simpson has just finished giving her a new wale.

On the West side Capt. Jno. Simpson has a gang of men at work on the S. S. Cambria, giving her new gallows, frame and other repairs, Capt. Peter Telford will command her. Capt. Simpson will put the Government Cruiser Bayfield in the dock this week for a good overhauling, Capt. M. Davis, with the drill and scow will leave here tonight for Tobemorey to load ice and if all goes well will no doubt take the hat for first arrival this season.

## CLEVELAND, O.

*Special Correspondence to The Marine Record.*

Riveters at the Globe Iron Works shipyard laid off work this week on a wages disagreement.

The steamer W. P. Thew will be offered for sale by the U. S. Marshal at this port on March 27th.

Palmer & Co. sold the steamer Business for H. J. Johnson to J. T. Mathews, of Detroit, consideration $20,000.

The Cleveland & Pittsburg Railroad Co. has made a proposition to the government to build a new river custom house near their freight house.

The steamer Sarah E. Sheldon arrived a this port from Port Huron on Wednesday. She will be cut down into a steambarge for carrying lumber and stone.

Capt. George Y. Dayton, of this port, is awaiting a Buffalo appointment, though he candidly admits that the crush for masters positions this spring is something above par.

Mr. Ives has retired from the firm of Corrigan, Ives & Co. and the business will now be carried on by Corrigan, McKinney & Co., Mr. Brice McKinney being the new member.

The steamer Cadillac finished loading coal at the Valley dock and returned to the old river bed, to lie there until it is considered best by her owners to put her in commission.

Mr. J. C. Gilchrist has retired from the firm of Moore, Bartow & Gilchrist and his place has been taken by Charles P. Gilchrist. The name of the firm will therefore not be changed.

Mr. W. K. Patterson, chief engineer of the I. O. T. Co. steamer Merrimac, spent a few days at this port during the week calling on vessel owners and builders in the interest of his patent draft indicator, an appliance which notwithstanding the dull times seems to be finding favor with the lake marine.

The L. P. and J. A. Smith Co., with a capital stock of $200,000, formed for the purpose of operating vessels, tugs, dredges and doing a general towing, freight, contracting and building business, has been incorporated. The incorporators are: L. P. Smith, W. K. Smith, G. B. D. Smith, J. A. Smith and James R. Sponkle.

Mr. M. A. Bradley is firm in his belief that tonnage should be handled so as to pay expenses, and consequently he is not in the wild scramble to sign charters at a losing rate. The Alva, now loaded at Chicago, will proceed to Buffalo on the early opening of navigation and then lay up with the rest of the fleet until May 1st, unless freight rates improve.

An Inter-Lake yachting association has at last been formed with Hon. George W. Gardner as commodore; vice commodore, J. E. Gunckel, Toledo; rear-commodore, H. C. Kendall, Detroit; secretary and treasurer, E. W. Radder, Cleveland; measurer, W. A. Ladd, Put-in-Bay; fleet surgeon, Dr. A. E. Claypool, Toledo. The place of the first meeting will be Put-in-Bay, July 17 and 18, to be followed by a cruise on the 19th.

The passenger steamer City of Detroit, of the Detroit & Cleveland Steam Navigation Co., arrived at this port from Detroit Monday afternoon shortly after 4 o'clock, opening the season about two weeks earlier than last year. She made the trip in six hours and eight minutes and the run from the "dummy," a distance of 48 miles, was made in two hours and 38 minutes, which is a little better than 18 miles an hour. She will make the weekly trips until the City of Cleveland comes out.

During the past few days vessel men have been offered 45 cents on coal to Chicago, Milwaukee and Sheboygan, and 40 cents to Escanaba, Gladstone and Manitowoc, but as very little has been done in regard to down cargoes from Lake Michigan ports, only a few boats for single loads have been chartered. Owners have been asked for figures on coal to Ashland and Duluth. The indications are that the Canadian Pacific coal to go to Fort Wiliiam this season will be carried by wild tonnage. Nothing has been done in ore freights for several days.

Work on the passenger steamer North West is being pushed at the Globe Iron Works Co.'s shipyard. Thus far steam has been generated in 18 out of the 28 boilers and the remaining 10 will be tested during the present and next week. The nominal evaporative efficiency of the boilers, it is said, will give the main engines 7,000 horse power and the auxiliaries 500 horse power more. It is expected that the North West will leave here April 15th. The North Land, the second of the company's passenger boats, will be launched at the Globe shipyard May 3rd, and will probably be ready to go into command in August.

## LAKE SUPERIOR IRON ORE.

The total production by the ranges of the Lake Superior iron district since ore was first shipped from Marquette county in 1885 has been as follows:

| | Tons. |
|---|---|
| Marquette range | 39,609,000 |
| Menominee range (16 years old) | 18,236,000 |
| Gogebic range (10 years) | 14,533,000 |
| Vermilion range (10 years) | 6,100,000 |
| Mesaba range (1 year) | 622,000 |

This is a grand total of 79,100,000 gross tons in round numbers. As showing how this business has expanded, it may be said that in all the years of the ore trade up to and including 1889 the total output had been only 43,068,000 tons, or a little more than half the total that stands to-day. The four years since the beginning of 1890 have seen as much business, therefore, as did the 35 years previous to that time. It is doubtful if this vast expansion of traffic, this phenomenal jump in production, can be equalled anywhere.

There is mining equipment in the Lake Superior region for the production of 12,000,000 tons, could any such quantity be used in the market, and of 7,000,000 to 9,000,000 tons that will likely be mined. If the year is in any way favorable, the Mesaba range can easily raise 2,500,000 to 3,000,000 tons. There is, of course, a question as to whether any such quantity could be handled by the two roads now reaching this range, but as both talk of large increase in track facilities, they may do it.

Mining men indicate a product for 1894, should conditions continue to grow better, of not far from 7,500,000 tons. Of this the Marquette range is credited with only about 1,600,000 tons, the Gogebic with nearly the same, the Menominee with less than 1,000,000, the Vermilion with 1,300,000 and the Mesaba with more than any of the rest, or 2,600,000 tons.

As regards the probability of the Mesaba product shutting out more of the older mines than are already placed beyond the limit of competition, on account of heavy mining costs, there is but one question to be settled—that of maximum proportion of this ore to be used in furnace operations. If it is found that Mesaba ore can be used in the proportion that the standard Bessemer ores are now used, the largest of the older mines will be worked on small margins. If it be found undesirable to run a furnace on all Mesaba, it can be seen that the price of Mesaba ores, while it will influence them, will not determine the price of other ores.

Last year the mines on the Vermillion and Mesaba ranges sent to Cleveland about 1,500,000 tons. This year that total will be exceeded by probably 1,000,000 tons. The Mesaba range is the uncertain factor in the situation. On the Vermilion range 1,000,000 tons of ore will be mined which will come in about equal proportions from the Chandler and Minnesota mines. The Iron King and Norman mines on the Mesaba, which are the property of the Minnesota Iron Co., will be drawn an for 500,000 tons. These figures are from statements made by president Bacon, and the company is now making preparations to ship this amount of ore.

The Cincinnati and Hale mines will swell the total of ore handled at Two Harbors by a considerable amount. It will be remembered that 400,000 tons of Hale ore has been purchased by the Buffalo Furnace Co., and a considerable portion of this will be forwarded during the coming summer.

According to Mr. Olcott's statement, the Lake Superior Consolidated Iron Mining Co., has not yet decided as to the extent of its work during the coming summer. "You can make quite as accurate a guess as I can," said Mr. Olcott recently. "Nothing has really been decided as yet regarding the amount of ore to be mined or the mines from which it will be taken."

Regarding the statements which have been published of late that Mr. Rockefeller had offered 2,000,000 tons of ore at Cleveland there has been no authorized affirmation or denial. An officer of the road and of the mining companies said, when asked by the representative of a Duluth paper regarding the report: "There is no truth in it. No such offer has been made. The story was sent out from Duluth as an unconfirmed rumor. It was taken up by the lower lake papers and commented upon as to its meaning and effect if the rumor were true. This article was worked over by the Cleveland papers into a definite statement and then from there it was sent out to the country as a positive fact. The story can readily be traced by the similarity of language in which it is framed. The qualifications as to the truth of the story have gradually been removed. That is all there is to this 2,000,000 ton romance."

Whether the price which has been quoted prevails or not there is no doubt but that the consolidated mines will furnish a considerable amount of ore. A very low estimate for the Mesaba range output is 1,000,000. A fair estimate is 1,500,000. The figures put at 2,000,000 would be large but not extravagant. The probable output of the Duluth mining region for 1894 is between 2,500,000 and 3,000,000 tons.

The conditions in the iron ore trade have been in the last three years markedly tending to the point where only the rich and strong can survive, and the near future will doubtless be full of important developments.

## FLOTSAM, JETSAM AND LAGAN.

The death of Capt. Charles McVea is announced from Fennville, Mich.

Capt. William Ayers will sail the schooner Lydia E. Raesser this season.

The death of Capt. Robert Johnson, an old lake navigator, is reported from Hamilton, Ont.

Work on the new piers being put in at the northeast end of Chambers Island, Green Bay, is progressing.

While dragging for nets off Huron recently, the tug Huron picked up a ten inch hawser 600 feet in length.

The Buffalo corn rate dropped from 2½ cents to 2 cents at Chicago yesterday, on account of early opening of navigation.

A few charters of wheat from Toledo and Detroit to Buffalo have been reported at 2⅞ cents for wheat and 2¾ cents for corn.

At Sheboygan the schooners Moore and Vega are having their spars and rigging fitted up in the same style as that of the schooner City of Grand Haven.

The sale of the steamer St. Paul, which was to have occurred at Detroit Saturday, was postponed by the United States marshal, who could get no bid on her over $7,500.

While putting a wheel on the tug Gunderson Bros at Sheboygan last week, Capt. Gustave Gunderson had his front teeth knocked out by a glancing blow from a sledge hammer.

At the Milwaukee dry dock the steamer John C. Pringle and barge Sweetheart have been libeled for repair bills to the extent of $987.15 on the steamer and $6,801.97 on the barge.

Capt. Eugene Marquette will command the steamer Frank L. Vance, vice Capt. Marion Tinney. Capt. Marquette was master of the steamer John Duncan last season and the season previous.

The owners of the Mary Mills deny through a Menominee paper the report that she will engage in the freight business between Chicago and Menominee this season. They say that the steamer lost money by the venture last season, owing to the delay at the docks in Chicago. The Mills will stick close to the lumber trade.

Supt. Kirby, of the Wyandotte shipyard, has written to the Shipbuilding Company at Newport News, Va., offering to send on a number of skilled workmen, from Wyandotte who will be provided with personal letters setting forth their qualifications. The Newport News people wrote back that they will be glad to take on the men recommended whenever there is an opening. Mr. Kirby says there are no orders in view yet for the Wyandotte yard this summer.

So far, only 1,500,000 bushels of wheat is covered by charters for shipment from Duluth to Buffalo. No charters, so far as can be learned, have been made there within the last three weeks. The price of wheat is so low in the east that shippers are unable to arrange to send anything forward. For Lake Erie tonnage the nominal rate is still steady at 2½ cents, though 2 cents is bid and the belief prevails that 2¼ cents would be accepted. Nothing has been done with Kingston and Montreal charters; 4¼ cents asked to Kingston. Lumber is quoted at $2 to Chicago.

There is now no ice anywhere on the lakes worth mentioning. Regular steamer service was resumed between Detroit and Port Huron last week and between Detroit and Cleveland on Monday last. Last week the fishing tug Norma reached Erie from Cleveland. This is recorded as the earliest arrival there in ten years. No ice was encountered. Alpena reports the arrival at that port of the schooner Hunter Savidge from Port Huron with supplies. No trouble was experienced from ice. There is no ice of consequence anywhere on Lake Superior and the Sault passage will probably be open within the next few days, so that vessels may be able to start from Duluth simultaneously with those from Chicago—something that has never been done heretofore.

## PERSONALS.

Mr. C. W. Elphicke, of Chicago, visited Cleveland this week.

Capt. John Shaw, manager of the Shaw-Eddy fleet, visited Cleveland, Thursday.

A. A. Parker and Capt James Millen are autographs found in the log book of the Weddell House, Cleveland, to-day.

Mr. E. Platt Stratton, engineer surveyor for the American Shipmasters' Association, "Record of American and Foreign Shipping," is visiting Cleveland this week in the interests of the society.

Mr. Frank Kirby, Capt. J. W. Westcott and Capt. Peck, made the first trip of the season in the City of Detroit, to Cleveland. The three gentlemen inspected the building now going on at the ship yards of the Globe Iron Works Co.

The general agents representing the underwriters of the Great Lakes to the number of a dozen or more are quartered at the Weddell House, Cleveland, to formulate their seaton tariff ou hulls and change the policies. Valuations are also to be treated to a reduction commensurate with the times, etc.

## AN IMPORTANT AMERICAN INDUSTRY.

The manufacture of seamless drawn brass and copper tubing is generally thought to be an ordinary industry and one not requiring any great amount of capital to manipulate or skill to manage, yet the contrary assumption more accurately covers the facts.

Desiring to place this industry in its proper category before the maritime public and lake interests, a letter of inquiry sent to the firm of Randolph & Clowes, Waterbury, Conn., brought a courteous reply and a most inclusive resume of the manufacture of tubing from which it appears that the drawing of seamless brass and copper tubes is a business very small in comparison to other branches of the brass and copper trade. It is extremely technical, requires intricate detail and the employment of massive and costly machinery, and is expensive for the simple reason that the output is reduced, owing to the loss found at several stages in the manufacture. The tube is first cast, and it may be said that on this initial process the whole success of not only the final product, but of the work, depends, as far as the financial feature is concerned. That this is so will be evident when we state that before it can be found out whether a casting is without flaw or not, it must pass through several operations in the shape of drawing, each one of which requires annealing and pickling. It is, therefore, apparent that a flaw in the casting may not be made evident until almost all work has been done on that casting to bring it to the shape required. In addition to this the details of keeping the machinery necessary for the work in shape must be done on the premises, as it is frequently the case in drawing tubes that the die has to be overhauled and shrunk after having been used in drawing only two or three tubes at a time. This, together with the first cost of this part of the plant and the unusual wear and tear, make the process, taken as a whole, one requiring great care and one in which it is extremely easy to spend much money without producing a perfect tube. In this connection we learn that the cost of one hydraulic bench alone, exclusive of the pumps necessary to run it, on which the larger tubes are drawn, exceeds the enormous sum of $80,000.

In quoting a literal excerpt from Messrs. Randolph & Clowes' letter relative to recent additions made to their works, they say: "We have made extensive improvements in our mill, to such an extent that our factory is now second to none in its equipments and facilities for turning out the very best class of work. We have also started a new department in which we make a specialty of plumbers' supplies and such goods as are necessary for interior work, brass castings and the like.

"We have also just completed in our tube mill a machine which is capable of turning out larger tubes than any other manufacturer that we know of in the world. The size of this machine is of course enormous, and its weight, together with its tools, approaches 100 tons. On this machine we are enabled to manufacture tubes up to 24 inches in diameter, 12 feet long, and shells up to 38 inches in diameter. The capacity of this machine opens a large field for the use of seamless drawn brass and copper tubing for marine work, where the less strong method of brazing tubes has been necessarily, heretofore, resorted to. The superiority of a seamless drawn tube over a tube with a brazed seam is self evident, and for naval architects and marine engineers this information will be very valuable."

Randolph & Clowes have, besides their main office in Waterbury, branch offices in the principal states from New York to Chicago and they rightfully take rank as one of the most prominent industries in the country.

We were further pleased to learn in the interests of our readers that when the question of using petroleum as a fuel in stationary plants was suggested, Randolph & Clowes were one of the first firms to introduce it; starting on the lines of other uses of this fuel, they found the method in vogue of handling and burning oil unsuited for their particular needs, and necessity becoming the mother of invention, they drifted from the beaten tracks and by persistent experimenting have succeeded in their efforts and at present are using it in connectien with seven "muffles" throughout their mills.

This change of course, necessitated the introduction of storage tanks, with a capacity of over 20,000 gallons; pumps to force the oil to the various parts of the mill, which together with the many necessary appliances make it one of, if not the finest oil fuel plants in the United States.

Much of the success of this immense industry we think should be credited to the business acumen, scientific skill and technical ability of Mr. George H. Clowes, whom, judging by our experience with the firm, invariably exercises the very acme ot business courtesies in all matters relating to the correspondence of interested persons.

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H. R. STICKNEY, of Portland, Maine, is building two fast steam yachts and will probably build a third. They will develop their speed by means of Stickney engines and Roberts boilers as usual.

## CANADIAN WRECKING LAWS.

ATTENTION IS HEREBY CALLED TO THE FOLLOWING PROVISIONS OF THE WRECK AND SALVAGE ACT, 49 VIC. CHAP. 81, WHICH WILL HENCEFORTH BE STRICTLY ENFORCED:

Whenever any person takes possession of wreck within the limits of Canada, he shall, as soon as possible, deliver the same to the receiver; Provided, that the Minister may, if he thinks fit, dispense with such delivery in the case of any wreck, upon such conditions as he thinks fit.

Every person taking possession of wreck within the limits of Canada, who—

(*a*) Fails to deliver the same to the receiver, in pursuance of the next preceding section; or—

(*b*) Whenever the Minister has dispensed with such delivery upon any conditions, does not either comply with such conditions, or deliver the wreck to such receiver as soon as possible,—

Shall forfeit any claim to salvage, and shall be liable to pay as a penalty double the value of such wreck, and a further sum not exceeding four hundred dollars.

OFFENSES IN RESPECT OF WRECK.

Every person who does within the limits of Canada any of the acts following, that is to say:

(*a*) Prevents or impedes any shipwrecked person in his endeavor to save his life, or the life of any shipwrecked person.

(*b*) Prevents, impedes or endeavors to prevent or impede the saving of any vessel which is wrecked, stranded, abandoned, or in distress, or any person in his endeavor to save such vessel.

(*c*) Steals or maliciously destroys any wreck, or—

(*d*) Sells any vessel or wreck found within the limits of Canada, not having a lawful title thereto—

Is guilty of felony, and liable to seven years' imprisonment.

Every person who within the limits of Canada does any of the acts following, that is to say:

(*a*) Boards any vessel which is wrecked, stranded or in distress, against the will of the master, unless the person so boarding is, or acts by command of the receiver,

(*b*) Assaults any receiver or any person acting as a receiver in the exercise of his duty for the preservation or assistance of any such vessel, or wreck, or assaults any person acting by command of a receiver in the exercise of his duty as aforesaid,

(*c*) Prevents, impedes or endeavors to prevent or impede the saving of any wreck,

(*d*) Secretes any wreck, or defaces or obliterates the marks thereon, or uses means to disguise the fact that it is wreck, or in any manner conceals the character thereof, or the fact that the same is such wreck, from any person entitled to inquire into the same,

(*e*) Receives any wreck, knowing the same to be wreck, from any person other than the owner thereof or the receiver, and does not within forty-eight hours inform the receiver thereof,

(*f*) Offers for sale or otherwise deals with any wreck knowing it to be wreck, not having a lawful title to sell or deal with the same, or—

(*g*) Keeps in his possession any wreck, knowing it to be wreck, without a lawful title so to keep the same, for any time longer than the time reasonably necessary for the delivery of the same to the receiver—

Is guilty of a misdemeanor and liable to two years' imprisonment,—or of an offence against this Act, and liable, on summary conviction before any two justices of the peace, to a penalty not exceeding four hundred dollars, or to imprisonment for any term not exceeding six months.

When a receiver suspects that any wreck is secreted or concealed by or is wrongfully in the possession of any person, he may apply to any justice of the peace for a search warrant, and such justice shall have power to grant such warrant, by virtue whereof it shall be lawful for the receiver to enter (and if need be by force) any house, building and place, whether enclosed or unenclosed, and any vessel, and to search for, remove and detain any wreck there kept or secreted; and if any wreck is discovered, and the person in whose possession and on whose premises the same is found fails, on being summoned, to appear before two justices of the peace, to prove to the satisfaction of such justice that he was lawfully entitled to the possession of such wreck, he shall be liable to a penalty not exceeding eighty dollars for the first offense—and for every subsequent offense shall be liable, at the discretion of the justices, either to a penalty not exceeding two hundred dollars or to imprisonment, with hard labor, for any term not exceeding three months; but the justices may, if they think fit, commit him for trial for misdemeanor under this Act: if any such discovery as aforesaid is made in consequence of information given by any person to the receiver, the informer shall be entitled, by way of salvage, to such sum not exceeding eighty dollars as the receiver allows under instructions from the Minister.

WM. SMITH, *Deputy Minister of Marine.*

## THE BELLEVILLE BOILERS.

The trials of this type of water-tube boiler, as fitted on board the Sharpshooter at Devonport, Eng., have begun, and have so far been satisfactory. The largest war vessel yet fitted with this boiler is the 18 knot French cruiser Milan, but it is also fitted in the S. S. Armand Behic and Polynesien, two of the French Australian passenger vessels. The engines of these vessels indicate about 10,000 H. P. each, and their very fast runs to Australia and back having attracted the attention of the Admiralty officials, a naval engineer was ordered to take passage in the Polynesien to Australia and to return in the Armand Behic, noting the actual results and character of the steaming power of the vessels and the working of their boilers. The officer's report was so favorable that it was decided to fit Belleville boilers to the Powerful, and subsequently, in the absence of another suitable type, to the Terrible. The boilers will be made in England by Messrs. Maudslay, who are agents for the patentees, Messrs. Delaunay, Belleville & Co. At Devonport a very exhaustive series of comparative trials will be made with the Sharpshooter, fitted with the Belleville boilers, and the Spanker, fitted with those of the Du Temple type.

## NOTES.

THE firm of Sullivan & Hubbard, Toledo, having been dissolved by mutual consent, L. S. Sullivan will continue the vessel and insurance agency and tug business as in former years.

THE fishery cruiser Petrel will patrol Lakes Erie, Huron and the Georgian Bay this season under orders from the Dominion Minister of Marine to protect Canadian fishery rights in those waters and the Dolphin will be engaged on similar service along the north shore of Georgian Bay and the north channel of Lake Huron. Capt. Dunn will continue in command of the Petrel.

*The American Shipbuilder*, New York, of March 15, contains a half-page engraving of the four-masted sailing ship Dirigo, built by Arthur Sewall & Co., Bath, Me. The Dirigo is the first steel ship built in the United States and besides the half page view of the ship under canvas showing the set of three sky sails with a fore and aft rig on the jigger mast, there is a line drawing showing the mast, rigging and sail plan of this handsome 3,000 ton craft. She has been classed by the American Shipmasters' Association in "The Record of American and Foreign Shipping."

COMMODORE William D. Whiting, United States navy, retired, who was knocked down and run over by a cab in New York recently, died on Monday. For more than a year previous the commodore had been a sufferer from kidney trouble which was aggravated by the accident until it produced death. Commodore Whiting served under Perry in the expedition to Japan and was the first officer in the fleet to set foot on Japanese soil. He was retired Oct. 12, 1881, on account of failing sight and later became totally blind. Two years before his retirement Commodore Whiting proposed a plan for the reorganization of the navy which provoked considerable discussion.

THE Roberts Boiler Works are trying to fill their orders by working nights. Within the past week they have taken orders for two large boilers for the new twin screw steel steamer being built by Marvel of Newburg, also a boiler for a new 85 foot yacht being built by the Gas Engine & Power Co. The large boiler for the steam yacht Restless of Buffalo is well under way and the boiler for the quarantine steamer State of New York will probably be shipped this week. The New York office of this company has been removed to larger quarters in the Taylor Building, 39 and 41 Cortlandt street, New York City.

ONE of the reasons for not constructing a submarine torpedo boat as talked about by the navy department for some time past was the fear, demonstrated by experiment to be entirely possible, that a submarine boat could not get sufficiently far away from the torpedo she would explode, to avert her own destruction or serious injury. More confidence has been given to the theory that it is possible to escape disaster in this way, however, by another experiment made off Newport, R. I., 100 pounds of gun cotton being exploded in proximity to a boat submerged fifteen feet in eight fathoms of water, without severe injury to the boat, although the concussion threw a column of water fifty feet into the air.

THE dread of burial at sea is robbed of half its terrors if it be true, as the investigations of Capt. Maury lead us to believe, that at certain depths decay is practically arrested, and that "all the corpses that have been committed to the deep in blue waters, with weights attached, are now standing on the bottom, their lineaments and features as perfect as the day on which their comrades were called to bury the dead." The London *Engineers' Gazette* suggests that "a special class of vessels might be made to supersede the hearse; masses of rock or iron, with suitable inscriptions, could be attached to the feet of the deceased instead of being placed over his head as at present. The process would be cheap and not in conflict with prejudice."

IT is always of the greatest benefit to be certain of reliable ground tackle. The firm of DeGrauw, Aymar & Co., New York, desiring, we presume, to hold safely THE RECORD office in its present location, has kindly forwarded us miniature Triple Grip and Vulcan stockless anchors, which are now being introduced for the first time on the Lakes, with all of their advantages over the old style of "mud hook." Lake agents are appointed for these specialties, but any of our interested friends can find the incandescent electric light brackets on the starboard side of our sanctum adorned with this pair of undeniable "ground muzzlers" all a cock-bill like veritable cat-heads on an old-time "wind-jammer." Models, we understand, can also be seen at the principal shipchandlers in Cleveland, Detroit and Chicago.

## MARITIME LAW.

ROBINSON & AL. EPR'S vs. STEAMER IDLEWILD.
SAME vs. STEAMER HAVANA.

WHARFAGE—RIGHT OF SHIP TO QUESTION TITLE OF WHARFINGER. Vessels which have made use of a wharf, whether under express or implied contract, are not entitled to refuse payment of wharfage on the ground that the wharfinger is not the legal owner of the property.

Brown, J. New York, Dec. 26, 1893.

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SHERBORN vs. BARGE N. & W. NO. 4 & AL.

*U. S. District Court, Southern District New York.*

ANCHORED VESSEL—DANGER OF DRIFTING—DUTY TO TAKE PRECAUTIONS. When there were plain indications of the liability of two anchored barges to drift, by reason of ice, against an anchored steamship, but neither of them took the precaution to let go an extra anchor, as they could have done, and thereafter they did drift alongside the steamship, where they remained until the turn of the tide, and during this time the ship made no effort to extricate herself from the dangerous position, and after the change of the tide, the barges swung against the ship and injured her it was held that both the ship and the barges were liable for the damage.

Brown, J.

The primary cause of the damage to the libelant's steamer Anerley was the drifting of the two barges in the ice during the night of February 22d, thereby the two came alongside the Anerley. No immediate damage was done. The damage arose afterwards, upon the change of tide from flood to ebb, when the relation of the three became somewhat complicated upon swings to the southward, and the Anerley had a plate stove in before the vessel got clear. I am satisfied that the two barges, after they got alongside the Anerley, made all reasonable efforts on their part, end, and did as well as they could to get clear, and to avoid any subsequent damage. If their original drifting upon the Anerley was without any fault on their part, the libel should be dismissed.

The case differs, however, from others that are cited on behalf of the respondents, in that both the defendant vessel had ample notice of the presence of an unusual quantity of ice in the Bay, and of the consequent necessity of taking special precautions against the liability to be carried away by the ice; to say nothing about their place of anchoring, nearly in line with each other and with the Anerley. Both barges had two anchors. Neither put out more than a single anchor—except that the Merryman, a few minutes before she began to drag, when it was too late, dropped her second anchor, and soon drifted upon the N. & W. No. 4, which did not drop her second anchor at all. To put out both anchors would have been but an ordinary precaution under the circumstances shown in the evidence. The danger from ice was not sudden or unexpected; but, as I have said had been long evident.

The neglect of reasonable precautions is not to be justified by citing instances of the negligence of other vessels. I do not find any case in which, under analagous circumstance, such accident have been adjudged inevitable. On the contrary, where there are known indications of the danger of drifting from any extraordinary causes, whether from ice, storm or position, ordinary prudence requires that both anchors be let go and the omission of this precaution is held to be at the owner's risk. The Sapphire, 11 Wall. 164, 170; the Energy, 10 Ben. 158; The John Tucker, 5 Ben., 366; The Eloina, 10 Ben., 458; The Lilian M. Vigus, 52 Fed., 747; The Mary T. Frazer, 26 Fed. Rep., 872. The English authorities are equally clear: The Dispatch, 14 Moore, Priv. C., 83; The Egyptian, 1 Asp. O. S., 558 Priv. C.; The Maggie Armstrong, 2 do, 218; The John Harley, do, 290.

It is further urged that the volume of ice was so great that two anchors would have made no difference. Very clear proof would be required to sustain a defense of that kind in behalf of those whose negligence is proved. In the present case there is nothing amounting to proof at all; but only certain opinions of persons interested. On the other hand, the fact that the ice parted not long after the two barges had drifted alongside the Merryman, and the uncertainty whether the steamer, though having out but a single anchor, drifted at all, show, as it seems to me, that this defense is mere speculation. I must, therefore, hold both barges in fault for getting into false position alongside the Anerley, which was the original cause of subsequent damage.

But I think the Anerley is also to blame for not taking means which were easily within her power, and which might safely have been employed to avoid the subsequent damage. That there was danger to be apprehended from the swinging of the vessels to the southward on the change of the tide irom flood to ebb, is manifest. The barges were alive to this danger. The Anerley seems to have shown entire indifference to the result. There was an interval of between two and three hours during which the Anerley might have been removed out of the way or have slipped her cable. Her inaction would almost seem to justify the hypothesis that she supposed the barges alone were likely to suffer damage; and that she would let them get out of it as they could. The situation, however, plainly involved danger to them all; and it was the duty of the Anerley as much as of the barges, to do what was easier within her power during the considerable intervals that elapsed before the change of tide, to avert the danger. The Sapphire, 11 Wals. 164.

Decree for the libelant for one-half of the damages against both defendants.

New York, October 8, 1893.

## EAST SHORE BUSINESS FALLING OFF.

The promise of an early start of the regular line steamers between Chicago, Milwaukee and lower lake ports is causing shipments of flour across the lake from Milwaukee to connecting lines at Ludington, Grand Haven and St. Joseph to slacken and before the close of the month they will have dwindled to almost nothing. Flour for shipment by the regular lines is already being stored in considerable quantities, with a promise of full sheds by the time the steamers begin to move.

## TAPPING AN INTERIOR.

Maj. W. A. Jones, of St. Paul, has written to Col. Kiefer, Washington, calling his attention to the fact that by a very small appropriation of money, water communication could be rendered possible from the Lake of the Woods to Lake Superior, thus opening up for commercial purposes a large and rich area of the state. The expenditure would be required between Vermillion river and Rainy lake. The River and Harbor committee will be asked to consider the matter.

## REVERSING SCREW PROPELLERS.

Mr. Robert McGlassen, whose valuable paper upon the subject of reversing screw propellers appeared a few weeks ago in THE MARINE RECORD, writes as follows a propos of his paper, and of late discussions upon the status of marine engineers, to the steamship. "It ought not to be difficult to elevate such where—in marine work—all is (or soon will be) engineering. Every atom of useless lumbering weight and every unnecessary action that we can dispense with will be better for the engineers. There is no need to keep such at onerous manual labor (merely) which would not be needed under a system better both for themselves and the owners. Lighter details, too, are more easily carried, adjusted, and repaired. The engineers employed in the next naval battle (should one unhappily occur) will be only too glad of labor (and life) saving appliances. Engineers can demand a recognition of their status, under modern conditions, if they are worthy of the name.

## CONNEAUT'S CAR FERRY PROJECT.

A dispatch from Erie says: "Work has been commenced at the Conneaut harbor by the Shenango Valley railroad, on the extension of its docks. When completed the docks will be 1,700 feet long and 330 feet deep. The company is receiving estimates on the construction of several boats for the transportation of cars of coal between Conneaut and Dover. The steamboats will draw about ten feet of water, and will have a capacity of twenty-two cars; the consorts will have a capacity of twenty-six. The car ferries are expected to be built and running in about four months, and will carry coal eleven months out of the year. The P., S. & L. E. has taken the contract to deliver 100,000 tons of coal to the Grand Trunk Railroad, and it is very certain that that order will be doubled. Last year the same company shipped 175,000 tons to Canada, and they are now opening up new mines with the expectation of doing a very heavy business across the lake. The company expect to bring minerals and lumber back from Canada.

## AN AUTOMATIC NIPPER.

The firm of E. C. Akers & Co., Port Huron, Mich., have recently placed upon the market an automatic nipper or line holder which it is expected will meet with an increasing demand as the appliance becomes more widely known.

From a drawing of the invention furnished by the patentee the holder is shown to be a simple arrangement consisting of two levers in the shape of a pair of shears, with gripping jaws set in each one in such a manner that they have a pivotal or rocking movement which causes them to close and securely jam a line while it is being transferred from a capstan to the timber heads, or under other conditions where formerly a stopper of some description had to be used in changing off the belay of a line, thus, besides saving time and labor, the nipper holds every inch of the warp, is easily worked in close quarters and is an appliance which the inventor classes as being cheap, durable and effectual, on these grounds alone, three excellent recommendations are given for the adoption of an automatic line holder in dock and deck work.

# CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

## REPORT LAKE HURON WRECKAGE.

GODERICH, ONT., March 20, 1894.

*To the Editor of The Marine Record:*

The current chart of Lake Huron which the United States Weather Bureau has just had published will show to the maritime public what I have personally long understood relative to the current setting in on the south-east coast and especially in the vicinity of Goderich. In this connection I desire to state through the columns of THE RECORD that if owners, shippers and underwriters of vessels or merchandise abandoned or jettisoned on Lake Huron would advise me of such at their earliest convenience it would in many cases, if not in all, lead to a recovery of the property or its value. I have agents stationed every twelve miles on the east shore of the lake who are under bonds to protect any wreckage or flotsam that may be washed ashore and the law is inclusive enough to maintain our authority in stopping all pillaging.

I may also inform you that I have at this writing a number of patent booms belonging to E. Hall, of Detroit, which were lost with a raft of logs last September. There are as well other booms on this shore here which Mr. Hall will take possession of again this spring and flotsam is not unusually disposed of here to the owner's advantage.

CAPT. WM. BABB,
Receiver of Wreckage.

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## COLUMBIA VERSUS YOSHINO.

AMERICAN SOCIETY OF NAVAL ENGINEERS.
WASHINGTON, D. C., March 17, 1894.

*To the Editor of The Marine Record:*

I note in your issue of the 8th instant, the enclosed clipping in reference to the Japanese cruiser Yoshino, which hardly does justice to our Columbia, as you will see by reference to THE RECORD of February 15th, where the correct speed of the Columbia for *four hours* was given as 22.8 knots. The later report in THE RECORD reads as follows:

"The enterprising Japs now appear as the latest claimants for possession of the fastest sea-going vessel in the world, saying that their latest addition—the Yoshino—can "lick" anything in the U. S. Navy. The Yoshino is 350 feet long and 46½ feet broad, and is said to have attained on her trials a mean speed of 21.6 knots with natural draught and 23.03 knots, or 26.57 statute miles per hour, with forced draught. This is as against our Columbia's 22 knots, and now it remains with us to go them one better. In this progressive age no one is allowed to remain at the top for very long."

On page 1068 of the last volume of the *Journal of the American Society of Naval Engineers*, you will see that the speed of the Yoshino, 23.03 knots, was made over a course one mile in length, and that it is the mean result of four such runs. If you consider the time occupied in making the turns, the Yoshino was under trial for 20 or 25 minutes—not more—while the Columbia, neglecting the time in making her turn, was running at full speed for nearly four hours. To put it differently, the Yoshino ran seven or eight miles, including the turns—the Columbia 88, neglecting the turn! To compare the two ships on the basis of such widely different kinds of trials is like comparing the time of a four-mile racer with that of a sprinter—they are simply not in the same class.

I saw a similar statement in a recent English engineering publication. It is pardonable in them to sound their trumpets, and that our own papers may not be led into accepting such statements as facts is my reason for troubling you in the matter.

Very truly your,

R. S. GRIFFIN,
Passed Asst. Eng., U. S. N.

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IT is a remarkable fact, remarks Congressman N. C. Blanchard, chairman of the House Committee on Rivers and Harbors, in an article in the *North American Review* for March, that the total amount expended for river and harbor improvements hardly equals what is paid out in one year at the present time for repairs and rolling stock on the railways of the country. The total amount appropriated for rivers and harbors from the beginning of the government in 1789 to the present time is, in round numbers, $240,000,000. What a small amount when compared with the present cash valuation of the railroads constructed in the United States since 1830 (say) $5,000,000,000? Yet it is probable that no distribution of public moneys has conferred more common and lasting benefits upon the people and upon the industries of the country at large than that for the support and development of our internal and seaboard commerce by the improvement of our rivers and harbors.

# The Marine Record,

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CLEVELAND, O., MARCH 22, 1894.


THERE is no assurance that the depth of water in the shoalest places on the lakes will be any better this spring than last. Lake Superior charters may, therefore, prove anything but remunerative at the rates now quoted, even for the largest class of tonnage. It would no doubt be well for owners to keep a weather eye lifting on the mean level of the lakes for a while.

THE *Leader* congratulates Clevelanders because the "Forest City" "does not lie east by southeast from Massillon," hence, is out of the track of the Coxey "army of peace" in its march to Washington. The particular pen pusher that pencilled the bearing, ought in justice to himself, have glanced over a compass card and captured at least one point out of the thirty-two that would have been intelligible, instead of quoting a "slang" term.

AT Goderich, Ont., the Dominion government is extending the harbor piers 400 feet on the north and 100 feet on the south side. The cribs, which are now ready to place, are 100 feet long, 30 feet wide and 32 feet deep, which, when sunk will give the piers a height above water of 12 feet. So far as depth of water is concerned, this will give Goderich an approach second to none on the lakes, and form a good harbor of refuge on the east shore of Lake Huron. The Dominion government ought now to establish a paid life-boat crew in lieu of the present volunteer service at Goderich, and if the life-boat was fitted with mechanical means of propulsion like the new craft at Liverpool, the south-east pocket on Lake Huron, which has always been an ugly lee shore, would then be amply protected, at least from a humanitarian standpoint.

IN keeping a report of marine meteorology for the Hydrographic office, the symbols used for wind velocity are those of the Beaufort scale and from 0 to 12 are based on "the muslin" which a full rigged ship could show to it, etc. The department desire to receive these reports from the Great Lakes and the branch hydrographic office at Chicago furnish a form of abstract log with this purpose in view. Considering that there are no full rigged ships on the lakes, and further, that the major portion of such reports would probably be made out by steamship officers, we think a revision of this full rigged ship notation is in order if voluntary observers are to work intelligently. Another thing, the Hydrographic office ought not to issue ocean meteorological recording forms to the lake marine, as they are at once too cumbersome, inclusive and contain a lot of extraneous matter distasteful to lake seamen.

ACCORDING to amended steamboat rules and regulations, which went into effect February 14th, 1894, pilots of steam vessels are instructed, through the local inspectors of steam vessels, when licenses are being issued to such pilots, either originals or renewals, that the signals provided in Pilot Rules, Lakes and Seaboard and Western Rivers for steamers meeting, passing or overtaking are never to be used except when steamers are in sight of each other, and the course and position of each can be accurately determined, in the day time by a sight of the vessel itself, or at night, by her signal lights. In fog, mists or falling snow, when vessels can not see each other, fog signals only may lawfully be given, and pilots should, upon hearing the fog signal of another vessel, ahead or on either bow, run slow, with frequent stoppages, until the fog signals of the opposing vessel are heard abaft the beam. The foregoing, with the recommendation that the international code of distress signals be used, seem to be the principal, if not the only alterations made in the laws and regulations affecting the lake marine at the annual meeting of the Board of Supervising Inspectors of Steam Vessels.

## TO UPBUILD THE MERCHANT MARINE.

The present Commissioner of Navigation, Eugene T. Chamberlain, contributes a lengthy article to the *North American Review* for March upholding the straddling position taken by the last administration in admitting to American registry foreign built ships, with the proviso that an equal amount of tonnage to that admitted be contracted for at home yards.

The article referred to bears the journalistic imprint of Mr. Chamberlain's former vocation and advocates the giving way of extremists on both sides so as to meet on common ground. Referring to the legislation which admitted the Paris and New York to American registry, Mr. Chamberlain says: "The privilege bestowed by the act of May 10, 1892, has been wisely and beneficially used, so well used, in fact, as to suggest that if American shipowners and shipbuilders generally were permitted to avail themselves of the privilege it bestowed upon one corporation, our merchant marine would soon be augmented by the purchase and registry of desirable foreign-built vessels, while at the same time construction in our own shipyards would be stimulated," as a proof of which he points to the activity now prevailing at Cramp's shipyard, omitting, however, the other side of the argument, viz.: that where one-half the tonnage is built to advantage, the whole would be doubly beneficial.

From our standpoint the arguments presented by Mr. Chamberlain are illogical, and, in a word, asks for but half of that which is truly within our province to demand as a whole. The act of May 12, 1892, made it imperative that sister ships to the New York and Paris should be built in American shipyards. This in effect protected coast, lake and river tonnage on account of the 7,000-ton limit, but the Commissioner of Navigation desires to go further and with the simplicity of a novice asks: "What would be the probable immediate effect of an act of Congress in brief terms permitting any American citizen to purchase abroad, free of duty, a vessel of any description and of recent construction, and to obtain for it an American register on the simple condition that before the issue of such register he shall give a bond to the United States, under suitable Treasury regulations, to build in American shipyards a vessel or vessels of equivalent tonnage and value?" Well! the probable effect would be to give foreigners about half the work now carried on in American shipyards; that's all!

A word in Mr. Chamberlain's ear: Is he aware that a handsome, powerful modern steel freight steamer of 5,000 tons capacity has just been launched from the yards of the Detroit Dry Dock Co., and that other similar ships are about being contracted for on the lakes? Has his attention not been drawn to the large, valuable, twenty-knot passenger steamers now under construction, and one in course of completion at the Cleveland shipyards of the Globe Iron Works Co., or that the firm of F. W Wheeler & Co., of West Bay City, Mich., have sent to the coast and ocean steel steamers the peers of any in the world? Surely the Commissioner of Navigation does not mean to invite foreign competition to split up work of this description, although his perverse advocacy seems to imply such a course, he further winds up his tirade against the native shipbuilding industry by assuming that foreign competition would "stimulate inventive ingenuity by putting side by side with American vessels under one ownership the newest and presumably the best vessels of foreign build of various classes and descriptions. The foreign patronage is argued in favor of on the following grounds:

"It must increase the opportunities for the employment of American labor on land and sea.

It must increase the activity of American shipyards by giving them the work of repairs on an increased tonnage of registered American shipping.

It must aid in the developement of the industries in steel and iron and other materials, contributing to shipbuilding, now in progress under the stimulus of the rehabilitation of the American navy.

It must increase the share of the United States in the carrying trade of the world.

Finally, these results will be obtained without the objectionable application of public funds to the promotion of private enterprise, without the violation of any canon of equitable taxation, but solely through the methods employed every day by the business man who offsets a high-priced purchase of securities or land or goods with a lower-priced purchase in the same lines, and finds his profit by striking an average of his purchases."

The foregoing results are devoutly to be wished but they can not be accomplished by giving up any portion of our shipbuilding to foreigners and re-enforcing their ability to further compete with American shipyards. Mr. Chamberlain endeavours to wield a facile pen by finally admitting that "Doubtless the time is not many years distant when we shall build ships of iron and steel better and more cheaply than they can be built anywhere in the world, as our native forests enabled us to surpass all in the days of wooden vessels. The navigation laws of the United States will not hasten the dawn of that day, nor can they effectively retard it," but with the latter part of his suggestion we are again at variance.

## THE AMERICAN LLOYDS VALUATIONS.

Writing in reply to a paragraph contained in the Chicago *Inter-Ocean* this week, Wm. W. Bates as representative of the American Lloyds, champions a New York classification society and takes exceptions to a report that the new book which is to be issued this week will raise a furor in vessel owning circles, on account of the valuation of lake vessels being rated much lower than in the domestic register, viz., Inland Lloyds. Mr. Bates says: "I thank the circulators of the prejudice thus expressed for the advertising it involves, I would assure the vessel public that the American Lloyds, the name of the new register, issued by the Shipmasters Association, New York, will show fairer and more reasonable valuations for insurance purposes than any issue of the 'Inland Lloyds' ever did. No favors have been shown, no fancy values assigned to one class of vessels and other classes oppressed by depreciation—no suiting of estimations to the classifications of risks by dodging below a certain figure or straining to reach above such and such limits to accommodate the wishes of any one, but justice has been done to all vessels as nearly as it is possible for insurance purposes.

"It may be added that no one outside of the work of classification and valuation has any information on which to base a statement respecting the valuation in the new register. It is far more likely that the vessel-owning judgment will approve it than that it will condemn it on the score of valuations."

The contentions of the erstwhile manager of the Inland Lloyds may be all right, because Mr. Bates is, no doubt, fully aware of the system formerly carried on in valuing lake tonnage classed in the Inland Lloyds, but since that period important changes have taken place in the build of tonnage and he ought to know as well as any one that the basis of valuations were always too wide even for underwriting purposes. A classification register ought not to attempt any guesses at valuing shipping under the various commercial fluctuations and freight earning abilities of any craft. The duty of a register is to furnish the particulars of construction equipment, tonnage, ownership, etc., and the rating under the rules, if classed by the society. Valuations are not only beyond the ken but are entirely outside the province of a society to meddle with. However, we know of no call for revised ratings of lake tonnage valuations, and if revised on the basis of interest earning ability for this season, there might, indeed, be an innovation that would startle the owners.

THE sun crossed the line this week but we have had no alarming atmospheric disturbances to verify the notions still entertained by a class of men relative to the regularity of equinoctial gales in high latitudes. It would seem that the September crossing is more closely watched than the March advent though it is simply ridiculous to think of ascribing any unusually felt influence to the fact of the sun crossing a point in the heavens at a certain instant of time. The vernal equinox is all right notwithstanding the Milwaukee weather man forecasts a probable ten days of severe winter weather, setting in Wednesday.

IT has been the custom for many lake vessel owners to make season agreements for salary with masters and engineers. This year the rule is being generally held in abeyance on account of the outlook for low freights, and monthly wages will likely prevail, in fact, a number of officers now mutually agree with the owners to "lay off," when the vessel is not chartered or has a long wait at any port seeking cargo.

## VISIBLE GRAIN SUPPLY.

The stocks of grain in Chicago elevators and afloat last Saturday evening were 22,282,000 bushels of wheat, 12,602,000 bushels of corn, 828,000 bushels of oats, 208,000 bushels of rye, and 30,000 bushels of barley. Total, 35,950,000 bushels of all kinds of grain, against 31,056,000 bushels a year ago. For the same date the secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada as 73,259,000 bushels of wheat, 19,739,000 bushels of corn, 2,509,000 bushels of oats, 449,000 bushels of rye, and 791,000 bushels of barley. These figures are smaller than the corresponding ones a week ago by 1,248,000 in wheat and larger by 392,000 in corn. The visible supply of wheat for the corresponding week a year ago decreased 83,000 bushels.

## STOCKING LAKE ERIE.

Superintendent Douglass, of the whitefish hachery, has placed 20,000,000 fry in the waters of the lake at Erie. He will put in the balance of the hatch, 6,000,000, this week. It is his intention then to secure from Port Clinton and Sandusky about 50,000,000 pickerel eggs for hatching for the lake and the interior streams. These will hatch in about ten days after being placed in the jars.

### WHERE TO PAY VESSEL TAX.

A case of unusual interest to Michigan vessel owners has just been decided in Detroit against the owners by Judge Carpenter entering a decree compelling the vessel owners to pay the tax assessed against them by the city of Detroit in 1892, and perpetually enjoining the village of Highland Park from collecting the tax assessed for and since that year.

This was a test case made in the interests of various transportation companies, which, in order to avoid the higher assessment of taxes in the city, had removed their offices to some of the townships surrounding the city. They had declined to pay Detroit city taxes for a few years past until finally the city took legal steps to enforce the payment of the assessments. The case was heard a few weeks ago before Judge Carpenter.

The complainant company was originally organized in 1881 under the name of Ward's Detroit & Lake Superior Line. By an amendment to the articles of incorporation, the name of the company was changed to the Crescent Transportation Co. in 1891, and the office was declared to be in Hamtramck. This, Judge Carpenter says in his decision, was done for the purpose, as frankly admitted by the officers and stockholders of the company, of having its property taxed at a low rate. He then goes on to say that the vessels of the complainant are taxable in the municipality in which its principal office for business is located. He refers to the fact that an annual meeting and a few meetings of the board of directors had been held in the office at Highland Park, in the township of Hamtramck, but says that nobody was kept in that office continually for the transaction of business.

The Supreme Court decision in the case of Transportation Co. vs. Assessors, 91 Mich., 389, is quoted. It says that the term "for business," used in the statute, cannot be limited to so narrow a construction as to say that it means simply the annual meeting of the stockholders or the board of directors. It must be held that the legislature used the term in its ordinary significance, and intended to refer to the business in which the corporation was engaged. The fact that the general manager, general freight agent, secretary and treasurer of the company resided in the city and had an office in connection with the local office of the company in Detroit, and that the actual business of the company was transacted in the city office, is held to show that the business office was in Detroit. The court, in his decision, continues as follows:

"Complainant admits by its bill, in other words, that it is taxable in one of these places, and it asks the court to determine in which of these places it is taxable. Since it is taxable where its principal business office is located, the bill admits that its principal business office is located in one of these municipalities. The finding, therefore, that its principal business office is not located in the village of Highland Park, leads necessarily to the conclusion that its principal business office is located in Detroit. Neither is it true that the business done at the Detroit office is of a local nature to the same extent as that done in Cleveland, Buffalo, Marquette and Duluth. In Detroit the general officers of the corporation reside. They are here more of the time than at any other of the places stated. Here they receive reports and remittances from the local agents at the other points, and here the complainants' general banking account is kept. I find, therefore, that the principal business office of complainant is located in the city of Detroit.

"Complainant introduced testimony tending to prove that if its vessels were taxable by the city of Detroit it could not successfully compete with lines incorporated under the laws of other states, whose property, by the laws of the states under which said corporations were organized, were exempt from taxation. The argument arising from this testimony is one that cannot be considered by the court. The laws of Michigan make the vessels of complainant taxable where its principal offices are located. If these laws are unjust or in any way inequitable in their operations, only the legislative power that enacted them can change them. It follows as a result of the finding above stated that the vessels of complainant were taxable in the city of Detroit and were not taxable in the village of Highland Park.

"As it appears that complainants' officers voluntarily listed the property in question for taxation with the assessing officers of the village of Highland Park, it is contended that the corporation is now estopped from questioning the tax assessed by that village. In my judgment the facts do not create an estoppel. The assessment of a tax has worked no injury in a legal sense to the village. A tax was assessed which the village had no jurisdiction to assess. It has lost nothing. To justify me in compelling the complainant to pay its municipal taxes both in the city of Detroit and in the village of Highland Park, I should want a decision directly in point. The fact that so painstaking a lawyer as the counsel for the village fails to find one leads me to the conclusion that none exists. As the action of complainant induced the village to make the assessment, it should pay the costs thereby occasioned."

The tax assessed against the Crescent Transportation Co. in Detroit was $1,975.75, while it was only $495 in Highland Park. The difference shows that there are thousands of dollars involved every year to the various companies, and for that reason the case will be taken up to the Supreme Court for final jurisdiction.

### THE TWENTY FOOT CHANNEL.

Messrs L. P. & J. A. Smith have sublet a considerable portion of their twenty-foot channel contract to the Sheboygan Dredging and Docking Co., which will dig 350,000 yards at Bar Point with a dredge now at work at South Chicago. The price paid for dredging at Bar Point is 18 cents per yard. Breyman Brothers, of Toledo, have also sublet a portion of their Grosse Pointe contract. C. H. Starks & Co., of Milwaukee, and Knapp & Dixon, of Racine, have cach taken 300,000 yards off from their hands. The price paid there is 12½ cents per yard. The work is to be completed by 1895.

### NEW COLLECTOR AT CHICAGO.

Martin J. Russell succeeded John M. Clark as Collector of the port of Chicago Monday and entered at once on the duties of his office. Postmaster Hesing, Appraiser Hoyne, ex-Appraiser Pearson and Capt. Davis of the Andy Johnson were in the office when the brief and rather informal exchange took place between the retiring and incoming collector. Speeches were made by Mr. Russell and the retiring collector, John M. Clark, and the latter was given a gold headed cane by the employes of the office. After the speechmaking Collector Russell and all the heads of departments in the Custom House dined at the Union League club as the guests of Col. Clark. Collector Russell announced that no changes in the force had been decided on and he expected to see all the present employes in their places and at work from day to day.

### TOPPING THE RECORD.

Mr. F. G. Whiting, western manager of the Cunard Steamship Co., has received the following cablegram:

"Lucania's passage equal to 5 days 9 hours and 24 minutes on northerly route, or 2 hours 43 minutes better than any former record; average, 21.73 knots; daily runs, 46, 491, 502, 516, 508, 510, 321, Daunt's Rock."

Her daily runs are unprecedented in transatlantic travel. She covered over 600 statute miles per day. Her first trip from Liverpool to New York, September 2, 1893, was made in 5 days 15 hours 35 minutes, breaking all maiden records by nearly seventeen hours. Her return trip from Liverpool to New York in 5 days 12 hours 47 minutes astonished the traveling public as beating all west-bound records. The fastest single day's run thus far of the Lucania is 560 knots, being equal to 645½ statute miles.

The Lucania is a most magnificent and gigantic steamship, and her title, "Sovereign of the Sea," she bears undisputed. She is 620 feet long, with a gross tonnage of 12,950 tons, and is fitted with two sets of the most powerful triple expansion engines that have yet been constructed, each set capable of indicating 15,000 horse power.

### STEAMER AND CONSORT LIBELED.

On Saturday the Milwaukee Dry Dock Co. caused the steamer John C. Pringle and barge Sweetheart to be libeled for repair bills in the amount of $897.12 on the steamer and $6,801.97 on the barge. The vessels are the property of Underwood & Coleman, lumbermen at Menominee, Mich., and their failure to meet the shipyard claims is a direct result of dullness in the lumber trade. It is thought an arrangement can be effected that will prevent a sale by the United States marshal.

### NOTICE TO MARINERS.

Notice is given by the Light-house Board that on the opening of navigation, 1894, the fourth order light at Waugoshance light station, on the northwest end of Waugoshance shoal, northeast end of Lake Michigan, will be changed from a fixed white light, varied by a white flash every ninety seconds, to a fixed white light, varied by a white flash every forty-five seconds. The order of the light will not be changed.

All the light-houses on Lake Michigan and Green Bay are now in service. The lightships in the Straits of Mackinaw will be towed to their stations on Saturday.

### VESSEL TRANSFERS.

The following transfers of vessel property have been recorded at the Milwaukee custom office:

Schooner Libbie Carter—Jacob A. Burton to Marcus Paulson, of Manitowoc, one-half, $155. Schooner, David A. Wells—William Spooner, of South Haven, Mich., to Jacob Barns and Henry Schilder, of Sheboygan, the whole, $1,800. Schooner A. T. Bliss—Isaac Miller, of Brooklyn, N. Y., to R. H. Mueller, of Milwaukee, one-eighth, $1. Schooner Lottie Cooper—Fred. F. Merrill to Oley Groh, of Sheboygan, one-sixth, $1,000. Schooner Lydia I. Raessor—Fred F. Merrill to Oley Groh, of Sheboygan, three-twelfths, $700. Scow Silver Lake—Jacob Sherkenborger to Nels Johnson, of Racine, one-half, $600. Schooner E. Scovill—Ernst D. Paetz to Fred Wilken, of Milwaukee, one-sixth, $1.

Capt. Groh, of Sheboygan, Wis., has sold a one-ninth interest in the steamer Susie Chipman to Capt. W. Lorenz. Capt. N. Gunderson will sail her this season.

Capt. E. B. Graham, of Fish Creek, has purchased the steam barge J. E. Rumbell.

Capt. Charles Ellis and Fred Lorenz have purchased from Capt. Thomas Richardson the steamer Hilton, for $8,000.

Walter S. Johnson, formerly of Kewaunee, has sold to Clerk of the Courts Fred Lorenz, his one-half interest in the schooner Morning Star, for $3,000.

The schooner Southside has been purchased from G. W. Wing, by Capt. Charles Ellis as she lies upon the beach in Bailey's Harbor for $500.

Victor Bonnah, Jr., has purchasəd the schooner Kewaunee for $3,500. She rates A 2, and will carry 250,000 feet of lumber.

Capt. Harris Baker, the well-known wrecker, has bought the steamer T. W. Snooks for $1,700 cash, and will use her as a wrecking steamer.

### APPOINTMENT OF MASTERS AND ENGINEERS.

Henry Leisk, Milwaukee, Wis.: P. J. Ralph—captain, H. Leisk; engineer, John J. Burnes. Schooner, Harold—captain, Thos. Leisk.

The Mutual & Menominee Line, Cleveland, O.: Cambria—captain, S. Murphy; engineer, John Mayberry, Corsica—captain, William Cumming; engineer, William Steen. Corona—captain, John Dunn; engineer. A. L. Wilcox. Norman—captain, S. Stratton; engineer; Clement Clark. Saxon—captain, William C. Goodsell, engineer, George E. Averill. German—captain, F. W. Stenton; engineer, George W. Curtiss. Briton—captain, ; engineer, O. H. Gilmore. Grecian—captain, James A. Walsh; engineer, T. J. Rees. Roman—captain, A. Greenley; engineer, S. A. Wells.

General Manager Newman, of the Cleveland and Buffalo Transit Co., has made the following appointments: Steamer State of Ohio—master, Capt. John Edwards; first mate, A. Fletcher; second mate, A. H. McLachlin; chief engineer, J. G. Randall; second engineer, A. Millroy; steward, W. H. Thorpe; purser, A. D, McLachlin. Steamer State of New York—master, W. H. Smith; first mate, George Rancier; second mate, P. J. Trezise, chief engineer, Robert Stage; second engineer, Hugh McAlpine; steward, M. M. Bailey.

Lake Erie Transportation Co., Toledo, O., A. W. Colton, general manager: Geo. J. Gould—captain, Walter Cottrell; engineer, George Butler. S. C. Reynolds—captain, Henry Root; engineer, J. H. Miller. Russell Sage—captain, Cooper Hewitt; engineer, Joseph P. Kohlbanner. John C. Gault—captain, C. H. Lewis; engineer, John C. Bustead.

Chas. Hebard, Pequaming, Mich.: Charles Hebard—captain, James Parsons; engineer, William Schumacker. Tugs, Daniel L. Hebard—captain, Hugh McKenzie; engineer, Joseph Greenleaf. Jay C. Morse—captain, Fred. C. Rogers; engineer, Charles Fischer. Allenton and yacht Morgan—captain, John P. Richards; engineer, John Rossiter. Schooners, Jennie M. Peterson—captain, Charles Bough. Aloha—captain, William Elliott. Annabell Wilson—captain, Dan Nathan.

Tonawanda Barge Line, Tonawanda, N. Y.: F. R. Buell—captain, C. W. Woodgrift; engineer, C. F. Lamb. A. Weston—captain, M. Hyde; engineer, John Hibbard. Cauisteo—captain, W. J. Lynn; engineer, C. S. Peltier. Norwalk—captain, C. S. Ruby; engineer, no appointment. Barges, A. Stewart—captain, Geo. Pollock; Eleanor—captain, Frank Dubay. Jennette—captain, Edward Moore. Elvina—captain, Wm. Campaw. Fulton—captain, Frank Laforge. J. B. Lozen—captain, John B. Lozen. S. B. Pomeroy—captain, James O. Roberson.

The Wilson Transit Co., Cleveland, O.: Yuma—captain, A. C. Chapman; engineer, John S. Kelley. Spokane—captain, B. H. Jones; engineer, James Derrig. Yakima—captain, W. W. Dawley; engineer, John Costello. Missoula—captain, W. A. Williams; engineer, Peter Lamar. Olymsia—captain, A. W. Shippard; engineer, Fred. Harmon. Sitka—captain, Dan Buie; engineer, M. McCune. Tower—captain, W. T. Foutherland; engineer, Charles Ogg. Wallula—captain, C. A. Benham; engineer, James McQuirk. Schooners, Yukon—captain, William Forbes. Wadena—captain, C. H. Daniels.

The Geo. Hall Co., Ogdensburg, N. Y.: Hecla—captain, D. Hourigan; engineer, D. Doyle. Tugs, W. L. Proctor—captain, W. A. Russell; engineer, A. E. Cline. Thos. Wilson—captain, Jos. Richard; engineer, R. J. Jardin. Curlew—captain, P. J. McGratt; engineer, G. M. Cline. Schooners, W. A. Sherman—captain, C. W. Howard. Bolivia—captain, Jas. Gooden. Mary Lyon—captain, S. La Flam. Jennie Matthews—captain, F. D. Linn. E. P. Beal—captain, Geo. Cate. Barges, Black Diamond—captain, A. Rabideau. Argosy—captain, John Gokey. Mohawk—A. Bennett, Sr. Onondaga—A. Bennett, Jr.

Western Transit Co., Buffalo, N. Y.: Arabia—captain, Robert Murray; engineer, James Clancey. Badger State—captain, A. J. McDonald; engineer, James Lee. Boston—captain, Dugald Buie; engineer, Thomas Mc Cabe. Buffalo—captain, Patrick Shea; engineer, Wm. McNulty. Chicago—captain, F. J. McCabe; engineer, F. A. Miller. Commodore—captain, R. D. Gardner; engineer, J. W. Brooks. Empire State—captain, John Cassin; engineer, G. F. Hale. Harlem—captain, Frank Williams; engineer, M. J. Laney. Hudson—captain, J. H. Dissett; engineer, Moses Trouton. Idaho—captain, G. W. Bryce: engineer, James Anderson. McCormick—captain, M. A. Huntley; engineer, Richard Spencer. Milwaukee—Captain, Michael Folan; engineer, J. W. Ramey. Mohawk—captain, Valnetine Jones; engineer, Henry Hess. Montana—captain, S. R. Jones; engineer, William Tibby, Syracuse—captain, Donald Gillies; engineer, J. W. Marks. Vanderbilt—captain, Neil McCormick; engineer, Fred Hale.

N. J. Cummings, Oswego, N. Y.: Charles S. Parnell—captain, P. Griffin; engineer, ——— ———, Mont Eagle—captain, Wm. Griffin; engineer, Fred E. Wheeler.

Harts Steamboat Line, Green Bay, Wis.: Welcome—captain, Wm. Baptist; engineer, George Coulter. Fannie C. Hart—captain, H. W. Hart; engineer; Mike Peck. C. W. Moore—captain, Chas. Graves; engineer, Charley Moreland. Eugene C. Hart—captain, C. B. Hart; engineer, James Miller.

Williams Transportation Co., South Haven, Mich.: City of Kalamazoo—captain, David Morris; engineer, Perry Knaggs. H. W. Williams—captain, John Boyne; engineer, A. G. Green. Lorain L.—captain, Frank Swails; engineer, Will Tylor.

E. C. Recor, St. Clair, Mich.; Steamers, F. W. Fletcher—captain, H. W. Moore; engineer, Wm. Brake. Mark Hopkins—captain, S. A. Lyons; engineer, S. G. Merrill. Schooner Porter—captain, Capt. McDonald.

F. & P. M. Railroad Co., Ludington, Mich. No. 1—captain, M. McRae; engineer, H. J. De Clute. No. 2—captain, Jas. Mooney; engineer, E. S. Heinline. No. 3—captain, John Stewart; engineer, R. S. McLaren. No. 4—captain, Jas. Russell; engineer, F. McLaren. No. 5—captain, Charles Moody; engineer, C. H. Wilcox.

A. H. Comstock, Alpena, Mich. Prop. Porter Chamberlain—captain, C. W. Black; engineer, R. Cameron. Schrs. Interlaken—captain, B. Warwick. Abram Smith—captain, Geo. B. Fuller.

Marine Transit Co., Marine City, Mich. Stmrs. Toltec—captain, James Taylor; engineer, Chas. Pierce. Aztec—captain, Jas. W. Baby; engineer, Amos Horton. Schrs. Zapotec—captain, Peter Thomson. Miztec—captain, Henry Shackett.

Graham & Morton Trans. Co., Chicago, Ill. Prop. Chicora—captain, Ed Stines; engineer, Robert McClure; R. C. Reid—captain, Capt. Griffin; engineer, ———. City of Chicago—captain, Capt. McIntosh.

McGraw Transportation Co., Bay City, Mich.: City of Paris—captain, Edward P. Ballentine; engineer, John McLaughlin. City of Venice—captain, Fred P. Houghton; engineer, Alex McDougall.

Northern Steamship Co., Buffalo, N. Y.: Northern King—captain, Marion Tenney; engineer, Wm. Pike. Northern Queen—captain, E. M. Smith; engineer, Harry Reynolds. North Wind—captain, Delos Waite; engineer, Frank Harringer. Northern Wave—captain, Martin Niland; engineer, Fred Potts. Northern Light—captain, M. J. Haberer; engineer, Lawrence Gebhard. North Star—captain, William Thorne; engineer, John O'Mard. North West—captain, W. H. Campau; engineer, Duncan Fraser.

American Transportation Co., Fairport, O.: Alex Nimick—captain, A. H. Reed; engineer, O. M. Beach. John Harper—captain, H. L. Miller; engineer, C. M. Stoddard.

## THEN AND NOW.

In the "good old days" the engine room staff had a single cylinder low pressure engine to look after. Boilers were only built for 35 pounds or so of steam.

See the difference now! Triple expansion engines with pressures way up toward a couple of hundred pounds to the inch. Every year greater power and more mechanism is placed under the charge of the engineer and he is expected by education and study to keep up with the times in appliance and materials.

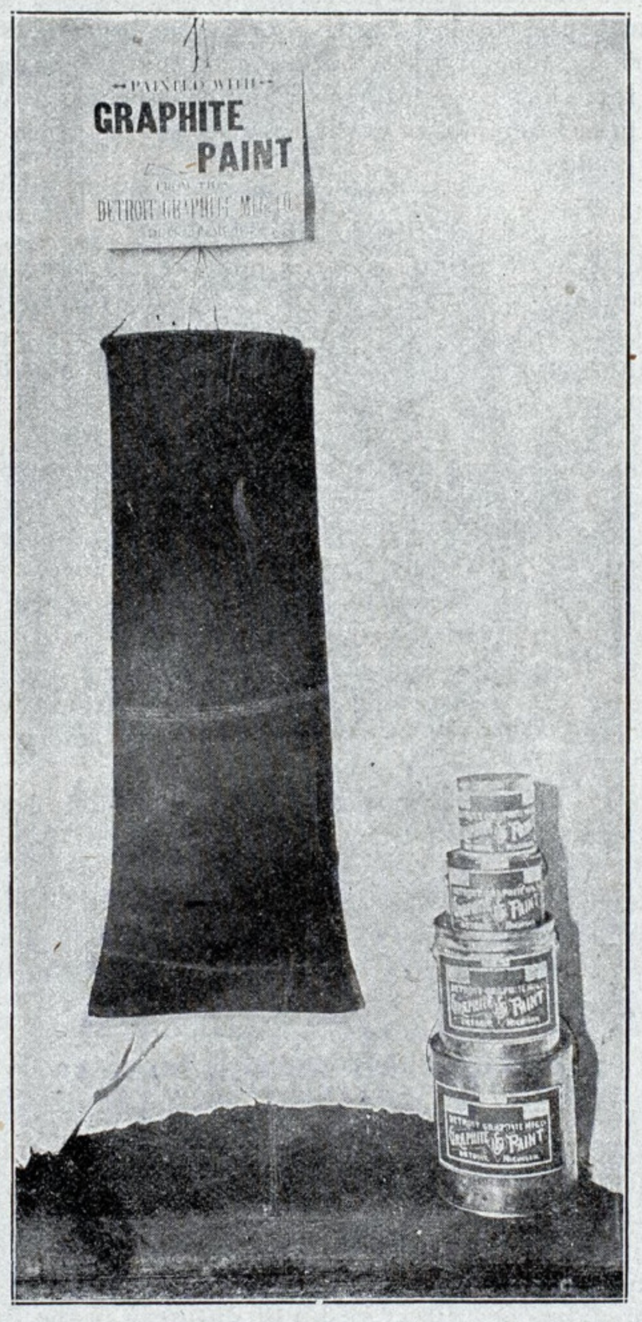
The compound engines, the great motors, the heavy shafts and gears now so common, present many new questions of friction and lubrication. Under these conditions pure flake graphite has solved so very many of the problems in friction that it would seem to be the key to solve many others. The graphite should be soft and yielding, absolutely pure, free from grit and the flake of uniform size.

We desire to state in this connection that the Joseph Dixon Crucible Co., Jersey City, N. J., have lately issued an exceedingly interesting pamphlet which we have now before us concerning lubricating graphite which they send to applicants free of charge.

## GRAPHITE PAINT.

The Detroit Graphite Manufacturing Co., whose extensive works are located at 542 River street, in the city of Detroit, is a comparatively young industry; yet it has demonstrated to its originators and stockholders the wisdom of the venture. Started by a number of well-know Detroit business men, it has been made a substantial and paying institution. The company has graphite mines of its own in Northern Michigan and a well equipped plant for the manufacture of paints and lubricants in the city of Detroit. Its principal product is a first-class protective paint, adapted to marine and railroad uses.

The graphite is mined in the Lake Superior region. It is shipped by rail to Detroit, where specially designed machinery reduces it to the finest powder, the result being a natural pigment of absolute uniformity. This mixed in correct proportions with pure linseed oil, guaranteed kettle boiled by the company in its own manufactory, is the Detroit "L. S. G." graphite paint; and its qualities are such that the Standard Oil Co., Canadian Pacific, Michigan Central and Grand Trunk Railways, C. B. Hutchins & Sons, the Detroit Bridge Co., Canada Malt Co., and many other large users of the product unhesitatingly approve it.




The illustration shows a canvas bag holding two hundred pounds of water. The bag (an ordinary grain bag costing 20 cents) was carefully painted inside and outside with graphite paint, filled with water and hung in the company's office in July, 1892. Since that time the bag has been refilled many times in consequence of evaporation, but not a drop of water has leaked through at any spot. The Michigan Central and other railroads use the paint on the hulls and decks of their steamboats and it is also used on smoke stacks, boilers, passenger and freight cars, locomotives, iron bridges, etc., it is also recommended for metal roofs and buildings of all kinds, and all structures adjoining railroads, in consequence of its great resistance to fire and heat. Its covering capacity on iron is guaranteed to be between six and seven hundred square feet to the gallon and the guarantee is also given that it is not affected by heat, cold, salt brine, acid fumes, smoke or chemicals. Canvas painted with Detroit graphite paint resists the action of flames to a remarkable extent, and the sample now before us, coated with the preparation has remained soft and pliable although under exposure in a heated room for some weeks. It will char but not burn; used as a roof covering it is without doubt an invaluable material preparation. Nor, as a covering for tin, will this paint crack or blister. The Detroit Graphite Manufacturing Co., guarantee their product as we have stated, and will furnish proofs of the merit of their paint on application.

## A WESTERN TRANSIT COMPANY APPOINTMENT.

Mr. S. D. Caldwell, general manager, has appointed J. B. Metz as traveling freight agent of The Western Transit Co., with headquarters at Minneapolis, Minn.

## NAVAL NOTES.

Reports from the Mare Island Navy Yard do not give very flattering accounts of the condition of the Boston, now under repairs at that station. The shafting is said to be badly scored, and the condition of the boilers is said to be very bad. A complete re-tubing is in progress and it will be some time before the ship is ready for recommissioning.

Several mishaps to battle-ships having occurred through the inefficiency at critical moments of the steam steering gear, a circular issued by the British Admiralty directs that the steam steering engine and its controlling gear, and all telegraphs and steering shafting are to be examined personally once a week by the engineer officer of the ship, and the result of the examination to be recorded in the engine room register. A similar examination is to be made on all occasions before getting under way.

The commission of inquiry which is investigating the allegations of inefficiency against the French Navy and the charges that the French coast defenses are inadequate, has succeeded in obtaining a great deal of evidence sustaining the charges, which were, in effect, that the war vessels of France were practically useless as engines of war, and the coast defenses so weak as to leave the country bordering the sea at the mercy of any first-class naval power.

The Equipment Office of the Washington Navy-yard is engaged in preparing a new code of night signals for the Navy. Experiments have been going on for some weeks past to this end, but satisfactory results have not yet been obtained. They will be continued, however, until a code is arranged which will be submitted to the Navy department for its approval. It is understood that a number of changes have been made in the existing code, but as no report of the work has been received at the Department, it is impossible to find out what they are.

The Boston Towboat Co.'s steamer Orion, which is to go to Roncador Reef to attempt to raise the U. S. S. Kearsarge, sailed from Boston, March 13, for Newport News, Va. Lieut. C. T. Force U. S. N., who represents the goverument, will join the vessel at Newport News. The Orion is expected to make the trip from that port to Roncador Reef in ten days. She will carry two or three divers with their appararus. On the after deck there is an automatic towing apparatus, manufactured by the American Ship Windlass Co., Providence, R. I., which regulates the strain on the hawser. To this is being fixed a 5¼ inch steel hawser, which will be used to tow the Kearsarge should they succeed in raising her.

## AMERICAN MECHANISM ABROAD.

It sounds somewhat strange to hear that among the multitude of water tube and coil boilers now on the market there is being fitted into British tonnage by Wilson of Hull and the Elswick Co. the well known Babcock & Wilcox American boilers.

It is remarkable that the staid and conservative shipbuilders on the other side should adopt American mechanism and only on account of its superiority being demonstrable do we suppose they have given way to adopt the best even although it may be of foreign manufacture.

The Liverpool *Journal of Commerce* (which by the way is the recognized medium through which Liverpool shipowning circles tell us all they know) very frequently mentions in its particulars of equipment of high classed tonnage the "American Ship Windlass" as being in the fitout and in fact this Providence, R. I., industry has made large inroads on foreign capital and chiefly we presume through Liverpool agents an international demand for the American ship windlass has now become quite a prominent factor in the maritime world although during the past quarter of a century the mechanism has been universally known though perhaps not so generally adopted as in recent years.

## SIGNAL LIGHTS.

Established in 1857 as signal light manufacturers the firm of Russell & Watson, successors to Felthousen & Russel, Buffalo, N. Y., are entitled to a high consideration from the maritime fraternity. The brand of this firm on side-lights, mast-head lights, binnicale lamps, anchor lamps, torches, etc., is sufficient guarantee of their burning quality, visibility and durability. Thirty-seven years is no inconsiderable period for a manufacture to stand the test of increasing and enhanced requirements, and this the well known house has eminently fulfilled in each department.

The foregoing mention is but a just tribute to the firm in noting our receipt of their new illustrated catalogue and price list, which contains the motto, "Get the best and avoid collisions." It may also be stated that Russell & Watson have always made a special study to obtain the highest grade and shade of colored glass for their side-lights, and in this particular they claim to take precedence over all other lamps manufactured in the United States. Another specialty is their new fluted lens, which has obtained an international reputation.

WILLIAM L. BROWN, President.

WALTER F. COBB, Vice President and Treasurer.

W. I. BABCOCK, Manager.
O. R. SINCLAIR, Secretary and Asst. Treas.

# Chicago Ship Building Company,

## STEEL STEAM-SHIP BUILDERS.

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LONG DISTANCE TELEPHONES:
SHIP YARD OFFICE, "SOUTH CHICAGO 40."
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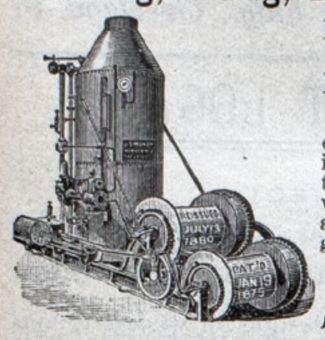
## Hoisting, Mining, Bridge Erecting,



**Dock Build'g, Pile Driving, Coal Hoisting and Quarry Engines**

of any power, with my improved Patent Friction Drums, with or without Boilers. Any amount of reference given. Established 1870.

**J. S. MUNDY,**
Newark, N. J.
Send for Catalogue.

1744 Market St., Philadelphia, Pa.; 22 Light St., Baltimore, Md.; 117 Water St., Pittsburgh, Pa.; 249 South Jefferson St., Chicago, Ill.; 715 North Second St., St. Louis, Mo.; 39 Magazine St., New Orleans, La.; 34 Fremont St., San Francisco, Cal.; 85 Front St., Portland, Oregon; Fourth & Wakouta Sts., St. Paul, Minn.

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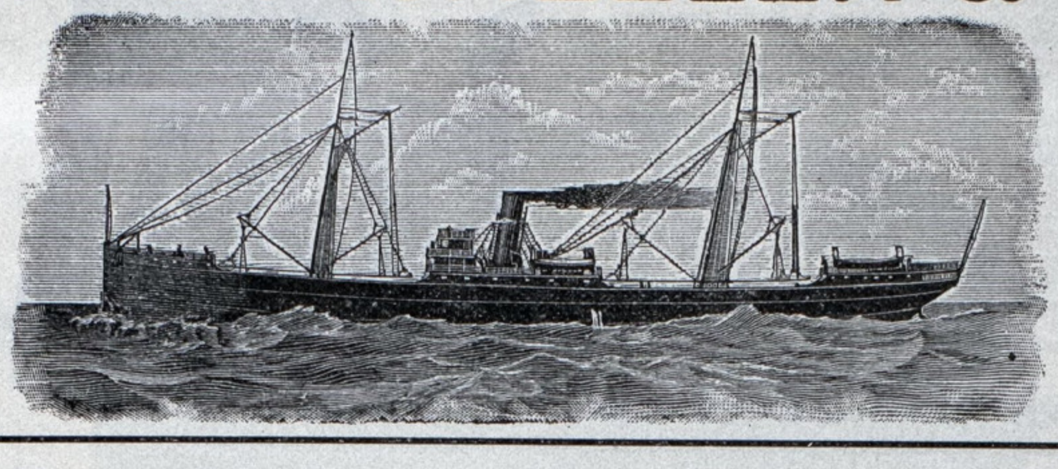
# F. W. WHEELER & COMPANY.,



BUILDERS OF ALL KINDS OF

IRON, STEEL AND WOODEN SHIPS,

**FOR LAKE OR OCEAN SERVICE.**

West Bay City, Mich.

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# FRONTIER IRON WORKS,

MARINE ENGINES,

DETROIT, MICH.

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INCORPORATED 1794.

# Insurance Company of North America.

**CAPITAL, Paid up in Cash, - - $3,000,000.00**
**ASSETS, - - - - - - 9,432,249.80**

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**MARINE AND INLAND INSURANCE.**

# ATLANTIC MUTUAL INSURANCE COMPANY,

(ORGANIZED 1842.) Office, 51 Wall Street, NEW YORK.

**Insures against Marine and Inland Transportation Risks and issue Policies making Loss Payable in England.**

**Assets over $10,000,000 for the Security of its Policies.**

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

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CAPITAL $300,000.

# The Marine Bank Company,

Incorporated in 1891 under State Law. CLEVELAND, OHIO.

Successors to E. B. HALE & CO., established in 1852.

DIRECTORS:

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Would be pleased to meet or correspond with any one whose present Banking relations are not entirely satisfactory, or who, for any reason, propose to open a new account.

We promise to make every effort to make our Bank a safe, agreeable and profitable place to do business.

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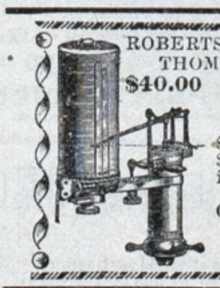

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$40.00

**Y SHOULD PAY U**

$85.00 for an Indicator when you can get either of these for $40.00, packed in finest cases, finest workmanship, finest material, and the **best** designs.

Send for circular of Reducing Wheels, Planimeters, Three-Way Cocks and 25 other high grade specialties.

**HINE & ROBERTSON CO.,**
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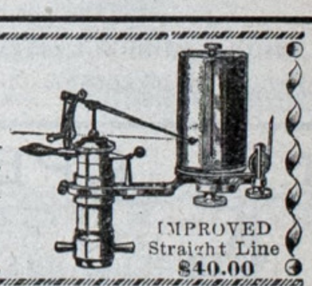

IMPROVED Straight Line
$40.00

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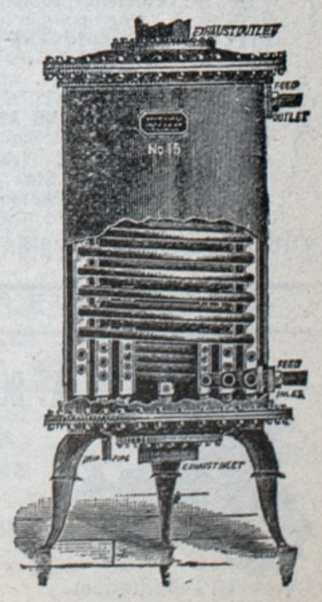
# THE NATIONAL FEED WATER HEATER

With this Heater

No back pressure is possible.
No straight tubes to leak.
No contact of the water with steam or iron.
No chance for grease in the boiler.

is pre-eminent in SIMPLICITY, EFFECTIVENESS and CHEAPNESS.



Made in 18 sizes, from 8 to 2,000 Horse Power capacity.

Heats the Water up to 208° to 212° F.

500,000 Horse Power in daily use.

In use on Largest Lake Steamers.
300 Electric Lighting Stations use this Heater.

With this Heater
Economy of price is assured.
Economy of coal is assured.
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Reliability is assured.

Every description of Coils and Bends of Iron, Brass and Copper Pipe.

## THE NATIONAL PIPE-BENDING COMPANY,

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Send for Catalogue of Users and Prices.

New York Office: No. 15 Cortlandt Street.

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MANUFACTURERS OF

BRASS RAILS, DEAD LIGHTS, DECK PLUGS, BELL PULLS, WHISTLE CRANKS, WATER GAUGES, INDICATOR COCK AND GREASE CUPS.

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# Neversink Cork Jacket and Life Belt

Warranted 24 lb. Buoyancy and full Weight of Cork, according to requirements of U. S. Inspectors.

SUPERIOR TO ALL OTHERS.

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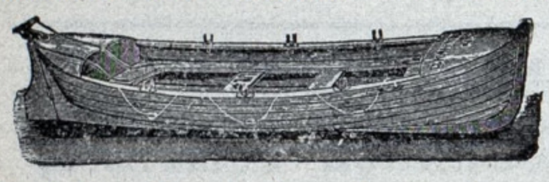
Also adopted by the principal Ocean, Lake and River Steamer Lines as the only Reliable Life Preserver. Vessels and the trade supplied. Send for catalogue.

Awarded Four Medals by World's Columbian Exposition,

## Metallic and Wooden Life Boats.



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Manufacturer of Woolsey's Patent Life Buoy, which is the lightest, cheapest and most compact Life Raft known. Send for Illustrated Catalogue.

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# CENTRIFUGAL PUMPS for COAL,

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SUPERIOR TO ANY OTHER

**16,000 IN USE.**

Our Water Ballast Pump will throw more water with less steam than any other. Photographs and estimates on application.

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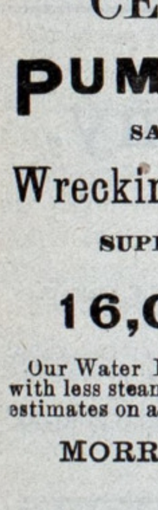

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**ECONOMIC SAFETY HOIST**

**500 to 30,000 Lbs. Capacity.**

Has been awarded the John Scott Medal and Premium by the Franklin Institute of the City of Philadelphia, for **Highest Efficiency, Simplicity and Durability.**

One man can lift two to three times as fast as with any other self-holding chain hoist. It has two speeds, is built strong and durable, and guaranteed to give satisfaction.

**TRAVELING AND SWING CRANES** up to 30,000 lbs. capacity and 50 feet span.

**Overhead Tramway, with Trolleys, Switches, Etc., Elevators and Special Hoisting Machinery.**

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Improved Bolt Helmet.

ESTABLISHED, 1844.

**A. SCHRADER & SON,**

**Manufacturers of Submarine Armor AND Diving Apparatus.**

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ESTABLISHED 1871. INCORPORATED 1893.

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AND BOILERS OF ALL KINDS.

Heavy Castings a Specialty. Prices Quoted on Application.

Fore and Aft Compound Marine Engines.

The Engines in the following boats are of our manufacture.

Edward Buckley, Manistee, 18 and 36x30.
Sachem, Grand Haven, 21 and 38x36.
Charles A. Street, Chicago, 20 and 36x36.
Isabella J. Boyce, Michigan City, 19 and 32x26.
M. T. Greene, Chicago, 20 and 36x36.
Passenger and Freight Steamer, Mabel Bradshaw, Muskegon, 16 and 28x26.
Ionia, Grand Haven, 24 and 46x42.
Survey Steamer, W. S. Hancock, 12 and 21x20.
Mark B. Covell, Manistee, 18 and 30x26.
Passenger and Frieght Steamer, Bon Voyage, Saugatuck, 16 and 30x26.
Tug, Hunter, Chicago, 15 and 28x22.
Tug, Edward G. Crosby, Muskegon, 16 and 30x24.
Oval Agitator, Chicago, 14 and 28x20.
Tug, Peter Coates, Sault Ste Marie, 10 and 20x16.
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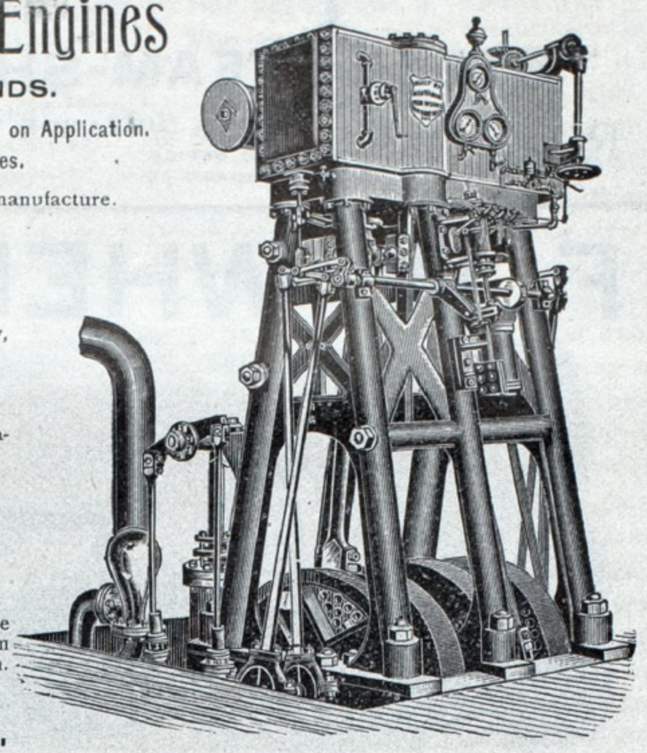

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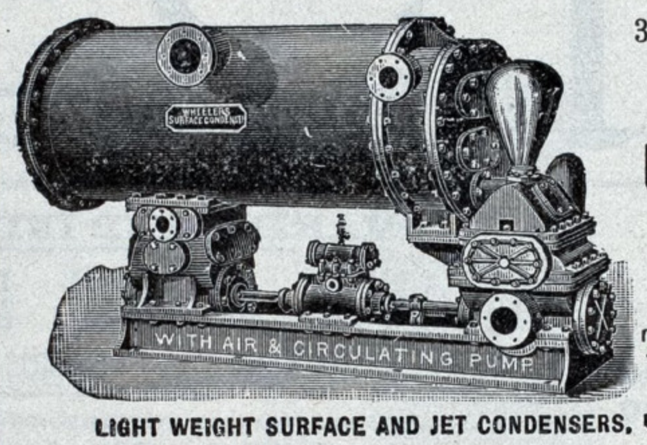


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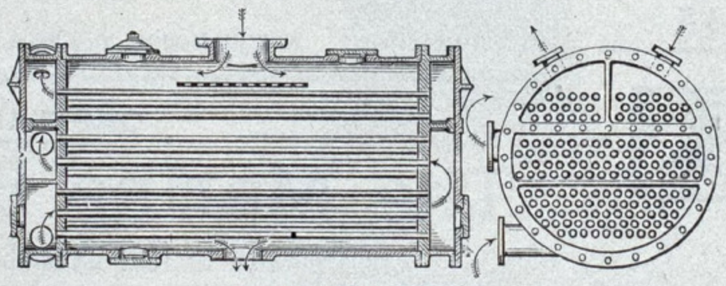

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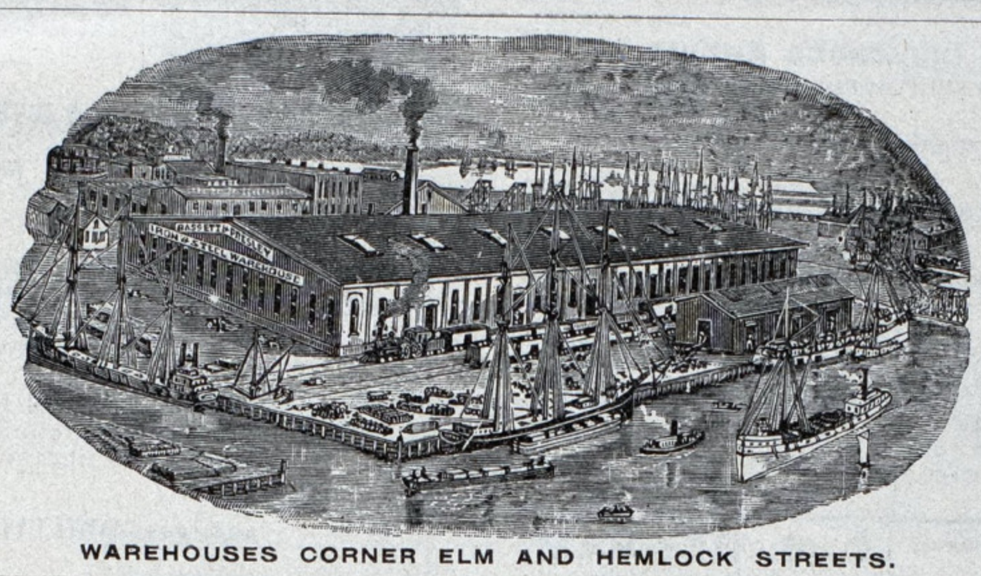

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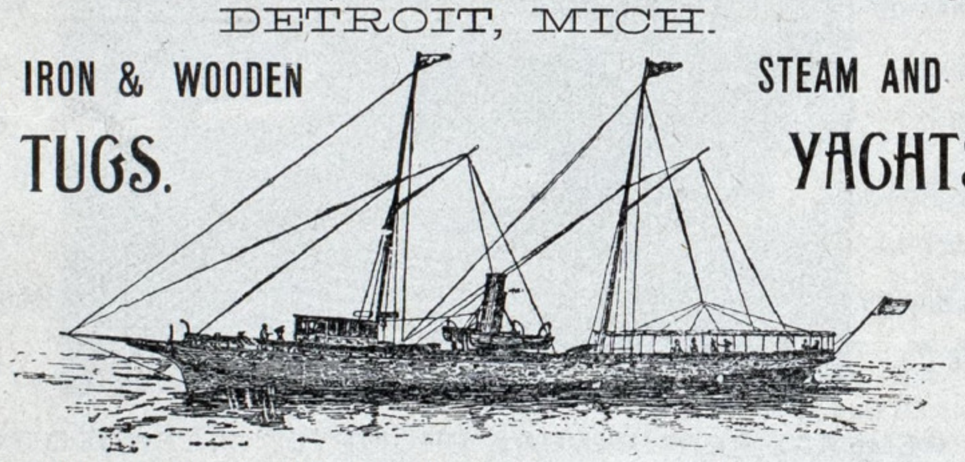

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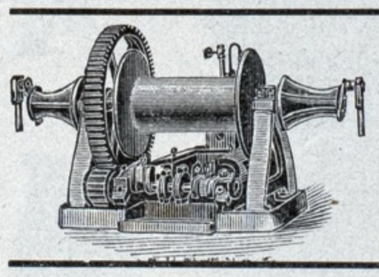

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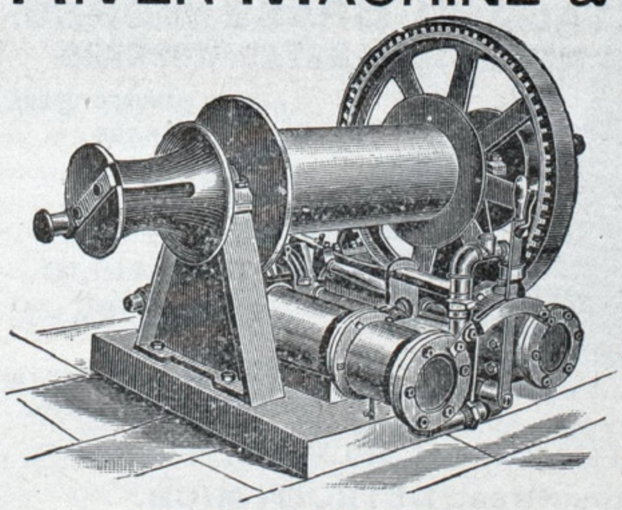

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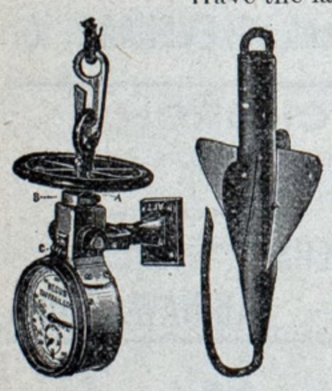

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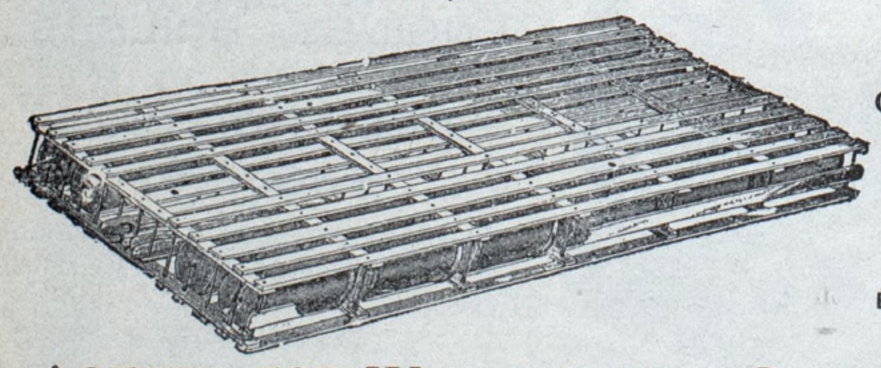

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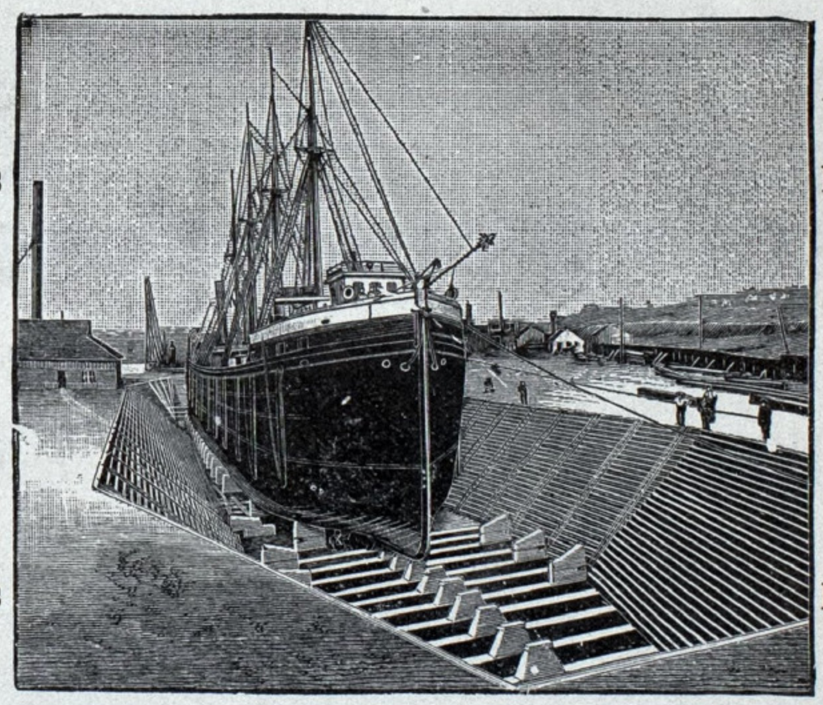

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